

# Enable-IT 250LP Lightning Protector Kit User Manual



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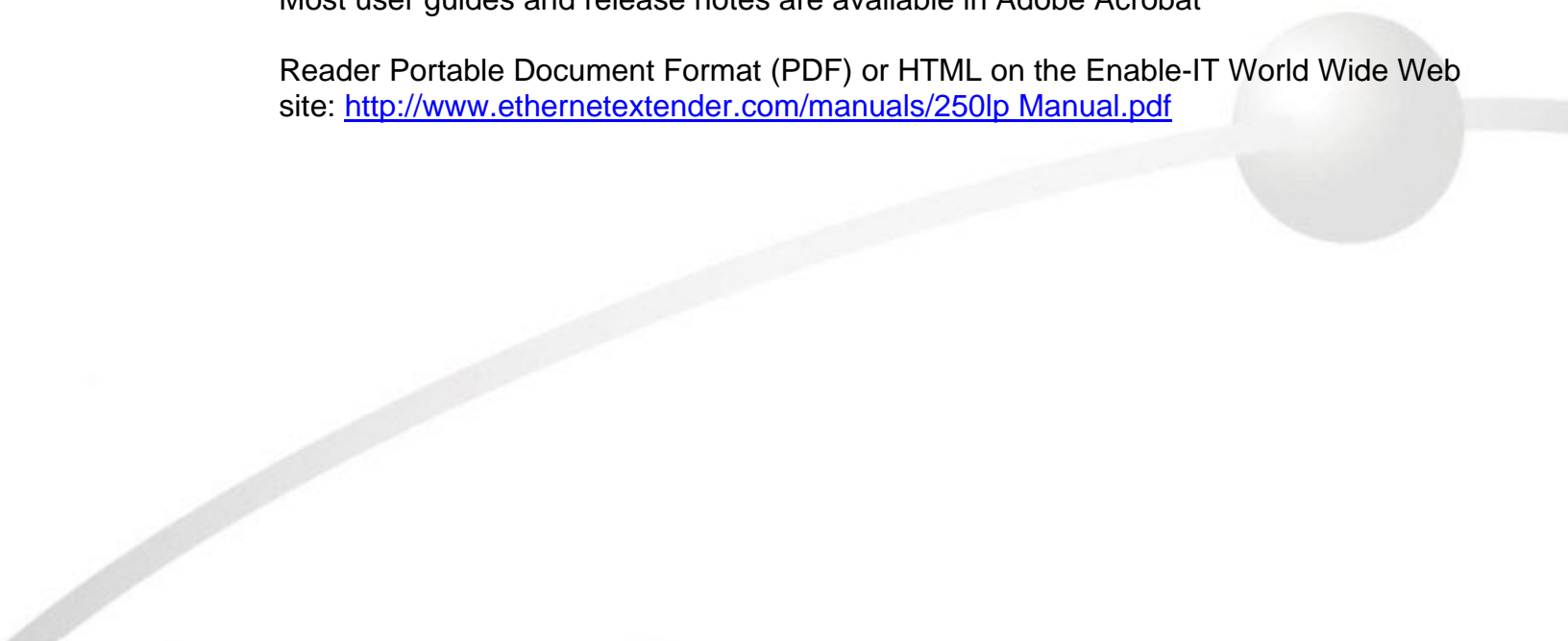
## ABOUT THIS GUIDE

This guide provides all the information needed to install and use the Enable-IT 250LP Lightning Protection Kit. This guide is intended for use by technicians who are responsible for installing and setting up network equipment. Consequently, it is assumed that the installer has a basic working knowledge of LANs (Local Area Networks) and voice telecom wiring.

*If the information in the release notes that are shipped with your product differs from the information in this guide, follow the instructions in the release notes.*

Most user guides and release notes are available in Adobe Acrobat

Reader Portable Document Format (PDF) or HTML on the Enable-IT World Wide Web site: [http://www.ethernetextender.com/manuals/250lp\\_Manual.pdf](http://www.ethernetextender.com/manuals/250lp_Manual.pdf)

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# INTRODUCING THE 250LP LIGHTNING PROTECTION KIT

Congratulations on purchasing the Enable-IT's 250LP Lightning Protection Kit — the simplest method to protect your LAN broadband equipment from damaging lightning strikes and powerful surges of electricity between outdoor or exposed LAN wiring segments.

The 250LP Lightning Protection Kit offers the Lowest Cost Solution in a simple design for rapid install using existing Ethernet cabling.

This chapter contains introductory information about the 250LP Lightning Protection Kit and how it can be used in your network. It covers the following topics:

- About the 250LP Lightning Protection Kit.
- Key Benefits
- Summary of Features
- Typical Applications

## About the 250LP Lightning Protection Kit

The 250LP Lightning Protection Kit solves the problem of high costs associated with protecting your investment in backbone and attached network equipment.

### Power-Over-Ethernet (PoE) Compatible

The 250LP is a Compact Weather Resistant Lightning Protector kit which provides lightning and surge protection for CAT5 data applications. The units are fully compatible with industry-standard Power-over-Ethernet (PoE) devices and 10/100 Base-T Ethernet networks, providing protection to both Ethernet data pairs as well as the PoE DC power feed.

High speed semiconductors clamp any voltage, positive or negative on the wires. The limits are +/- 15 volts on pins, 1, 2, 3 and 6 and +/- 58 volts on pins 4, 5, 7 and 8. The units are compatible with both normal and inverted polarity voltage PoE equipment. For maximum protection two 250LP units should be used, one at each end of the CAT5 cable. Most PoE capable equipment is not protected from surges on its CAT5 cable.

This Lightning Protector is compatible with both 10 Base-T and 100-Base devices as well as Power-over-Ethernet (PoE) devices, including Wireless Access Points, Access Servers and Outdoor Routers that support Power-over-Ethernet (PoE).

A ground lug and terminal is provided in the lightning protector housing providing superior grounding.

The compact weather resistant housing features a lockable hinged cover and break-away holes are provided on the rear of the enclosure for mounting. The cable grommets may be adjusted to cable size and are removable.

### Cisco Compatible

This lightning surge protector is compatible with Cisco Aironet® 1100 and 1200 series access points, DC Injectors and other equipment supporting reverse polarity PoE pinouts.

## Key Benefits

The following list identifies the 250LP Lightning Protection Kit key benefits.

- Protects against costly LAN equipment replacement in case of electrical damage.
- Rapid installation with small box profile, no programming and no firmware to upgrade.
- Low profile box with dual Ethernet LAN port and grounding terminal.

## Summary of Features

The Enable-250LP Lightning Protection Kit has the following hardware features:

- Transparent to Ethernet line over existing CAT 2 (Telco) up to CAT5e wiring
- Uses RJ-45 Telco style jacks for Ethernet line protection
- Rapid Telco style installation – no programming required
- Supports digital PoE (Power over Ethernet) including Cisco reverse polarity
- Network Equipment independence – Transparent to protocols/applications/MAC

### Electrical Specifications

|                              |  |
|------------------------------|--|
| <b>Ethernet Connectors</b>   | (2) RJ45 Jack  |
| <b>Data Lines</b>            | Pair 1: Pins 1 and 2<br>Pair 2: Pins 3 and 6                         |
| <b>Data Clamping Voltage</b> | 15 Volts   |
| <b>PoE Clamping Voltage</b>  | 58 Volts   |
| <b>CAT-5 Power Pinouts</b>   | +/- VDC: Pin 4<br>+/- VDC: Pin 5<br>+/- VDC: Pin 7<br>+/- VDC: Pin 8 |

### Mechanical Specifications

|                               |  |
|-------------------------------|--|
| <b>Enclosure Material</b>     | Weather Resistant Polycarbonate Plastic            |
| <b>Enclosure Color</b>        | Gray   |
| <b>Ground Lug</b>             | 10 AWG Max.  |
| <b>Operating Temperature</b>  | -40 C (-100 F) to +80 C (+176 F)                   |
| <b>Weight</b>                 | .27 lbs. (.12 kg)                                  |
| <b>Dimensions (W x H x L)</b> | 2.52 x 2.39 x 4 (inches)<br>64 x 60.7 x 101.6 (mm) |
| <b>RoHS Compliant</b>         | Yes  |

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## Typical Applications

Enable-IT 250LP Lightning Protection Kit is usually installed into existing Ethernet wiring to protect against any unwanted electrical feedback and damage to other LAN equipment that is costly to replace. The 250LP Lightning Protection Kit allows a standard Ethernet segment to be protected quickly by installing on both ends of an exposed wiring segment. The 250LP kit is wall mountable and weather resistant so that installation is quick and simple.

Installers have the convenience of a LAN Ethernet ports sealed for peace of mind protection and no maintenance. Rapid installation allows for minimal interruption and the reverse polarity technology allows for investment protection with POE or WiFi AP installation issues. The 250LP Lightning Protection Kit is a passive device so no interference or power is required for either end.

The Enable-250LP Lightning Protection Kit is suited for the following key environments:

- **Commercial Buildings (Multi-Tenant Units)**
- **Business Parks (Multi-Tenant Units)**
- **Apartments (Multi-Residential Units)**
- **Hotels (Multi-Hospitality Units)**
- **Business Suites (Multi-Hospitality Units)**
- **School Campuses (University, K-12)**
- **College Housing (Multi-Residential Units)**
- **Mining Operations – Quarries, Mine shafts**
- **Nautical Infrastructure – Cruise ships, Marinas, dive operations, subs**
- **Video Surveillance/Security**
- **WiFi Deployment – ISP's, RV Parks, Construction sites**
- **Manufacturing – Foundries, pharmaceutical, aerospace, automotive, petroleum, concrete plants, etc.**
- **Retail POS – Department stores, Bars, restaurants, retail spaces**
- **Government – Naval ships, FEMA, Housing, USGS, National Parks, Forestry, Research stations, NASA, utilities, etc.**
- **Education – outdoor camps, college campuses**
- **Healthcare – Hospitals, elder care, outpatient facilities**
- **Entertainment – Movie theaters, home entertainment, fairs, outdoor venues**

# INSTALLING THE 250LP LIGHTNING PROTECTION KIT

## OUTDOOR INSTALLATION WARNING

### IMPORTANT SAFETY PRECAUTIONS:

#### Site Plan - Installation Design Considerations

The planning process should involve a site walkthrough and discovery survey. Lightning and high voltage power line risks should be identified and avoided wherever possible for the installation for the 250LP and your wiring. Estimate the best locations to position the Enable-IT 250LP units to adequately protect any exposed or at risk wiring. Document your findings to use in designing a network topology and documentation to aid in the support your Ethernet connectivity.

**LIVES MAYBE AT RISK!** Carefully observe these instructions and any special instructions that are included with the equipment you are installing.

**CONTACTING POWER LINES CAN BE LETHAL.** Make sure no power lines are anywhere where possible contact can be made. Antennas, masts, towers, guy wires or cables may lean or fall and contact these lines. People may be injured or killed if they are touching or holding any part of equipment when it contacts electric lines.



Make sure there is NO possibility that equipment or personnel can come in contact directly or indirectly with power lines. Assume all overhead lines are power lines. The horizontal distance from a tower, mast or antenna to the nearest power line should be at least twice the total length of the mast/antenna combination. This will ensure that the mast will not contact power if it falls either during installation or later.

#### **TO AVOID FALLING, USE SAFE PROCEDURES WHEN WORKING AT HEIGHTS ABOVE GROUND.**

- Select equipment locations that will allow safe, simple equipment installation.
- Don't work alone. A friend or co-worker can save your life if an accident happens.
- Use approved non-conducting ladders and other safety equipment. Make sure all equipment is in good repair.
- If a tower or mast begins falling, don't attempt to catch it. Stand back and let it fall.
- If anything such as a wire or mast does come in contact with a power line, **DON'T TOUCH IT OR ATTEMPT TO MOVE IT.** Instead, save your life by calling the power company.
- Don't attempt to erect antennas or towers on windy days.

#### **MAKE SURE ALL TOWERS AND MASTS ARE SECURELY GROUNDED, AND ELECTRICAL CABLES CONNECTED TO ANTENNAS HAVE LIGHTNING ARRESTORS.**

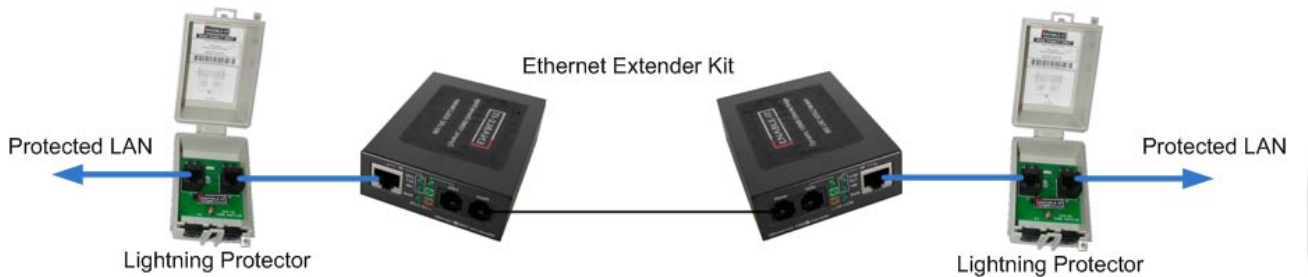
This will help prevent fire damage or human injury in case of lightning, static build-up, or short circuit within equipment connected to the antenna.

# INSTALLING THE 250LP LIGHTNING PROTECTION KIT

## Unpacking the Enable-IT 250LP Lightning Protection Kit

Carefully remove the Enable-IT 250LP Lightning Protection Kit from all packing materials in the box. Verify that the items listed below are present. Make sure that the equipment supplied matches what you ordered. If any items are missing or damaged, please contact your Enable-IT or your distributor for assistance.

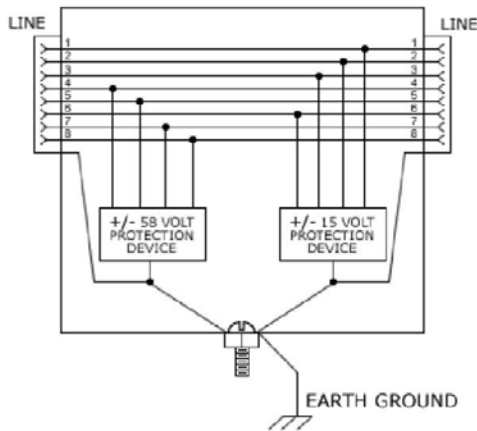
- (2) The Enable-IT 250LP Lightning Protection Units
- Enable-IT 250LP Lightning Protection Kit User Manual (this manual)



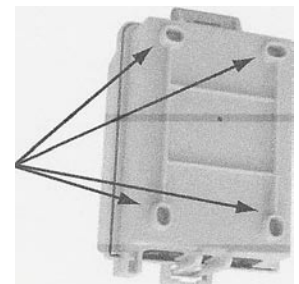
## Performing the On-Site Installation

- ➊ Punch required holes in Cable Grommet and insert wires into protector. (Cable Grommet is removable)
- ➋ Insert the terminated CAT5 cable into the RJ45 jacks Note, unit provides protection to both jacks equally.
- ➌ Attach ground wire to the Ground Lug (10 AWG max.) and attach to terminal inside the protector.  
 Grounding Note: To ensure proper operation of the protector, install an earth ground to the ground lug in the protector. Please refer to the National Electric Code (or your local codes) for additional information or contact a licensed electrician for assistance.

If mounting this unit



- CAT5 Pinouts:**
- 1 - Data 1 +
  - 2 - Data 1 -
  - 3 - Data 2 +
  - 6 - Data 2
  - 4 - DC 1
  - 5 - DC 1
  - 7 - DC 2
  - 8 - DC 2



Break-Away Holes

## Technical Support

Enable-IT OEM Technical Support is available directly to customers and distributors. All support requests are processed through the online support portal. This allows us to provide assigned support ticket numbers in order to bring closure to any technical issues.

### Online Technical Services

The Enable-IT Support Portal is available 24/7. No password or user account is necessary. Please use this support website as your first source for help as it contains an on line knowledge base of articles, documentation, FAQ's and other problem-solving resources. This web-based support resource provides the quickest solution to the most common technical support issues.

[http://www.ethernetextender.com/support/support\\_overview.php](http://www.ethernetextender.com/support/support_overview.php)

## Returning Products for Warranty Repair

Enable-IT, Inc. warrants to the original purchaser of the Product ("you" or the "End User") that, for the one (1) year period commencing on the date the Product was purchased (the "Warranty Period"), the Product will be substantially free from defects in materials and workmanship under normal use and conditions. Electrical damage is not an item that is covered under this warranty or extended warranties. Optional two (2) year and three (3) year warranties are available to extend this coverage if purchased during the first year of coverage.

If authorized by Enable-IT to return a Product which does not conform to the warranty set forth above, the End User must: (1) obtain a return materials authorization (RMA) number from Enable-IT by contacting the Customer Service Dept. at 888-309-0910 between the hours of 8:00 a.m. and 5:00 p.m. PST and otherwise fully comply with Enable-IT's then-current RMA policy; (2) return the Product to Enable-IT, Inc. in its original packaging freight pre-paid; and (3) provide to Enable-IT the original receipt or bill of sale establishing the date on which the Product was purchased.

Please ship Authorized RMAs to:

Enable-IT Processing Facility  
16600 Harbor Blvd, Ste G  
Fountain Valley, CA 92708

## Returning Products for Refund

30-Day refund applies to single kit Ethernet Extenders only and is subject to a 25% Restocking Fee. Shipments without valid / authorized RMA number or sent to our corporate Las Vegas Address can be refused and or billed for additional shipping.

## ENABLE-IT LIMITED WARRANTY

Enable-IT warrants the Enable-IT 250LP Lightning Protection Kit solely pursuant to the following terms and conditions.

### 1. PRODUCT WARRANTY

a. Express Warranty Enable-IT warrants to the original purchaser of the Product ("you" or the "End User") that, for the one (1) year period commencing on the date the Product was purchased (the "Warranty Period"), the Product will be substantially free from defects in materials and workmanship under normal use and conditions. This warranty does not apply to Products which are resold as used, repaired or reconditioned or consumables (such as batteries) supplied with the Product. Enable-IT does not make any warranty with respect to any third party product, software or accessory supplied with or used in connection with the Product and such third party products, software and accessories, if any, are provided "AS IS." Warranty claims related to such third party products, software and accessories must be made to the applicable third party manufacturer.

b. Remedies for Breach of Warranty In the event of a breach of the foregoing warranty, Enable-IT will, in its sole discretion and at its cost and subject to the terms of the following paragraph, repair the non-conforming Product, replace the non-conforming Product with a new or reconditioned Product or refund of the purchase price for the Product. Any new or reconditioned Product provided pursuant to this paragraph is warranted as provided herein for the remainder of the original Warranty Period. THE REMEDY SET FORTH IN THIS PARAGRAPH SHALL BE THE END USER'S SOLE AND EXCLUSIVE REMEDY FOR BREACH OF THE FOREGOING WARRANTY.

c. Conditions for Warranty Qualification If authorized by Enable-IT to return a Product which does not conform to the warranty set forth above, the End User must: (1) obtain a return materials authorization (RMA) number from Enable-IT by contacting the Customer Service Dept. at 888-309-0910 between the hours of 8:00 a.m. and 5:00 p.m. PST and otherwise fully comply with Enable-IT's then-current RMA policy; (2) return the Product to Enable-IT in its original packaging freight pre-paid; and (3) provide to Enable-IT the original receipt or bill of sale establishing the date on which the Product was purchased. Products returned to Enable-IT without an RMA number will be returned to the End User. Enable-IT shall not be responsible for damage or loss during shipment of the returned Product to Enable-IT.

d. Voiding of Warranty. The express warranty set forth above shall not apply to failure of the Product if the Product has been subjected to: (i) physical abuse, misuse, improper installation, abnormal use, power failure or surge, or use not consistent with the operating instructions provided by Enable-IT; (ii) modification (including but not limited to opening the Product housing) or repair by any party in any manner other than as approved by Enable-IT in writing; (iii) fraud, tampering, unusual physical or electrical stress, unsuitable operating or physical conditions, negligence or accidents; (iv) removal or alteration of the Product serial number tag; (v) improper packaging of Product returns; or (vi) damage during shipment (other than during the original shipment of the Product to the End User from Enable-IT, if applicable).

e. **Warranty Disclaimers** THE EXPRESS WARRANTY SET FORTH ABOVE IS IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL, EXPRESS OR IMPLIED. ENABLE-IT DISCLAIMS, TO THE MAXIMUM EXTENT PERMITTED BY LAW, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT OF THIRD PARTY RIGHTS. NO PERSON (INCLUDING WITHOUT LIMITATION, ENABLE-IT' EMPLOYEES, AGENTS, RESELLERS, OEMS OR DISTRIBUTORS) IS AUTHORIZED TO MAKE ANY OTHER WARRANTY OR REPRESENTATION CONCERNING THE PRODUCT. IF THE DISCLAIMER OF ANY IMPLIED WARRANTY IS NOT PERMITTED BY LAW, THE DURATION OF ANY SUCH IMPLIED WARRANTY IS LIMITED TO ONE (1) YEAR FROM THE DATE OF PURCHASE. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES OR LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY MAY LAST, SO SUCH LIMITATIONS OR EXCLUSIONS MAY NOT APPLY. THIS WARRANTY GIVES THE END USER SPECIFIC LEGAL RIGHTS AND THE END USER MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION. ENABLE-IT DOES NOT WARRANT THAT THE OPERATION OF THE PRODUCT WILL BE UNINTERRUPTED OR ERROR FREE.

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