

Installation Instructions & User Manual

POWERWARE TVSS

ZONESENTINEL®

AC Panel Transient Voltage Surge Suppressors

INTRODUCTION

This document explains how to install the ***Powerware TVSS ZoneSentinel®*** AC Panel Surge Protection Devices.

INSTALLATION INSTRUCTIONS

Warning: Terminals marked L1, L2, L3, N, GND (where relevant) must be connected respectively to phase(s) neutral and ground. Failure to comply may result in danger or damage. See corresponding diagrams for proper connections.

INSTALLATION DESCRIPTION

Powerware TVSS ZoneSentinel® units are connected in parallel (or in "shunt" across) the supply to be protected. The connecting cable does not carry the supply current, only the current associated with suppressing the transient overvoltage.

MOUNTING

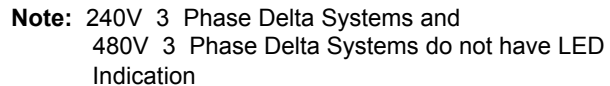
The units should be mounted as close as possible to the panel to be protected. See Connecting Lead lengths on page 5. Conduit, preferably metallic, is to be installed from the suppressor to the panel. Drill holes in the ***Powerware TVSS ZoneSentinel®*** enclosure only in the designated areas as shown in recommended cable dressing illustrations (page 6). Mount the unit in the appropriate location using the mounting holes provided on the enclosure.

FLUSH MOUNT

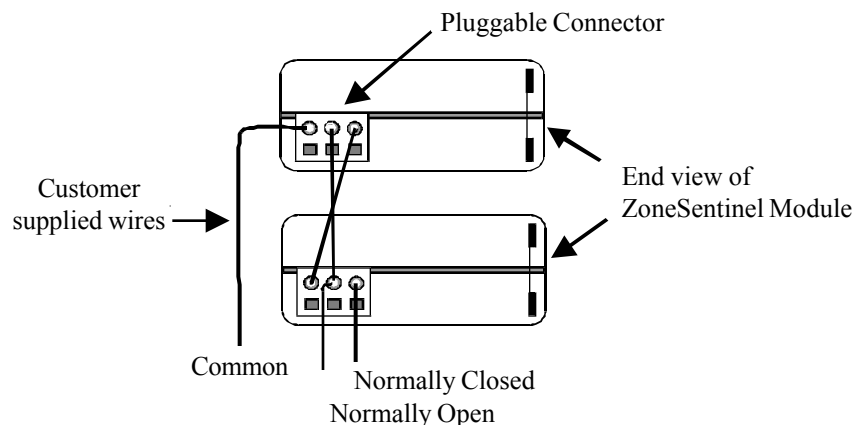
The flush mount **Powerware TVSS ZoneSentinel®** is installed into a suitably sized hole in the wall. Remove the four snap-in screw covers and remove the cover, temporarily disconnect the cover ground wire. Choose a location such that the recessed part of the **Powerware TVSS ZoneSentinel®** enclosure can be fixed to a wall stud or suitable upper or lower support. Be sure that the **Powerware TVSS ZoneSentinel®** enclosure is flush with the wall. Follow the standard instructions for location and connecting leads. Reconnect the cover ground wire and install the cover plate. Replace the four snap-in screw covers.

INCORRECT INSTALLATION WILL IMPAIR THE EFFECTIVENESS OF THE AC PANEL PROTECTORS. Particularly important is the length of the connecting leads (page 5).

The **Powerware TVSS ZoneSentinel®** units have comprehensive, continuous visual status monitoring present on each module. **NOTE: Indicator windows do NOT illuminate.**



A remote indication of the reduced protection state is available as a normally open or normally closed dry contact. Pluggable connectors must be wired as shown below.



On certain models, a RED warning light is provided. Should this light glow RED at any time, consult a qualified electrical contractor to check the integrity of the building wiring. This RED light does not indicate suppressor failure, however a RED glowing light is indicative of potentially hazardous site wiring.

CONNECTING LEADS

Connect the suppressor as shown in the installation diagram. Refer to page 5 for recommended cable dressing. Connect the terminals within the suppressor to the load side of 30A breakers within the panel.

RECOMMENDED WIRE GAUGE

Minimum of 10 AWG

Maximum of 4 AWG (for ease of dressing)

LENGTH OF CONNECTING LEADS

The longer the connecting leads between the the *ZoneSentinel* and power panel, the higher the residual transient voltage.

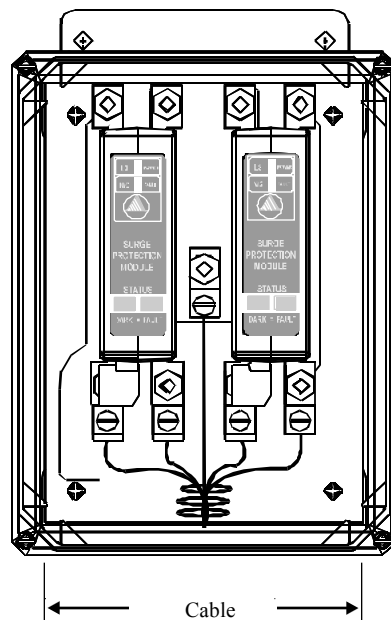
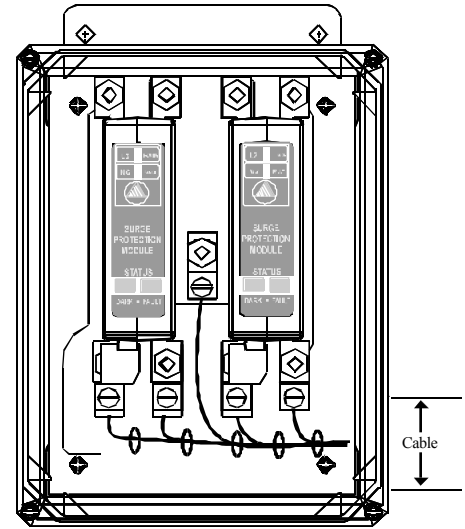
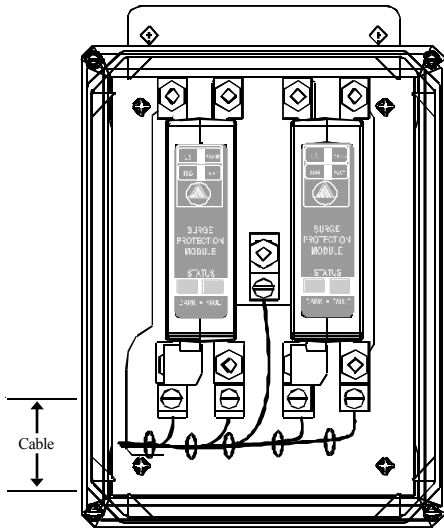
RECOMMENDED MAXIMUM: 500mm (19")

IDEALLY: 250mm (10")

Each 250mm increase in cable length; increases clamping voltage by 25V per 1000A surge current discharged.

- **BIND THE PHASE NEUTRAL AND GROUND CONDUCTORS TIGHTLY OVER THE ENTIRE RUN FROM THE SUPPRESSOR TO THE SERVICE PANEL.**
- **ALWAYS USE THE SHORTEST LENGTH OF CONNECTING CABLE POSSIBLE.**

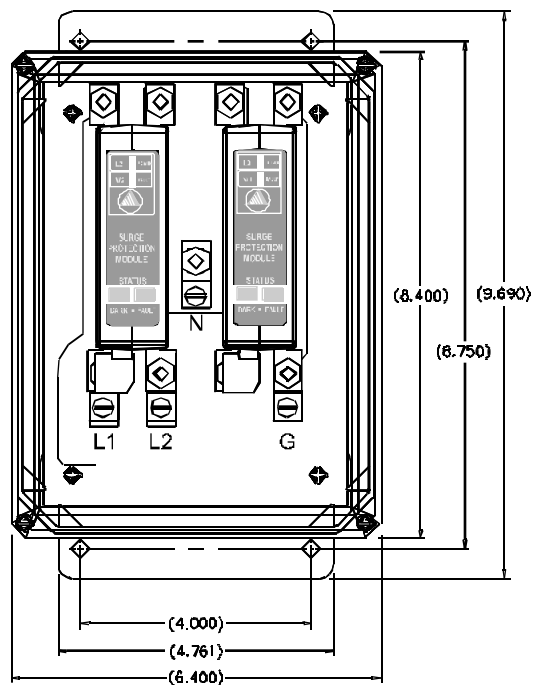
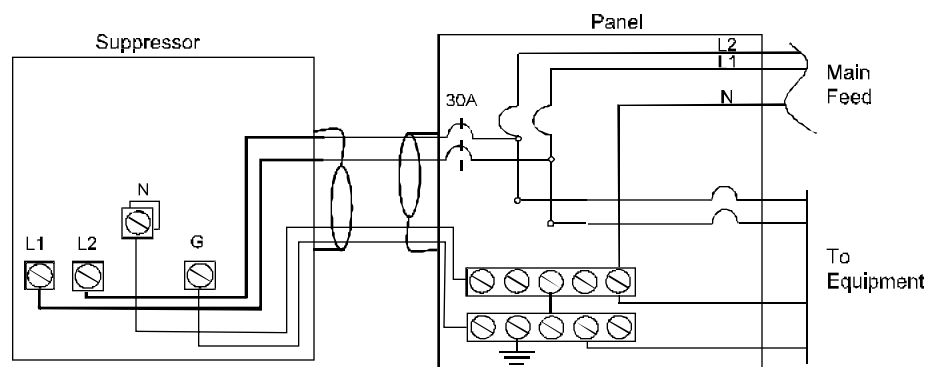
RECOMMENDED CABLE DRESSING



POWERWARE TVSS **ZONESENTINEL® Configuration** **and Schematic Connection Diagrams**

SALES MODEL: ZSS P/N PT12100

120/240V SPLIT PHASE 3W

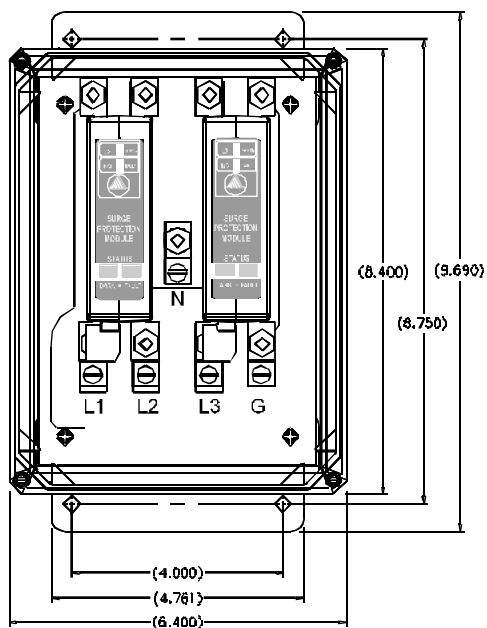
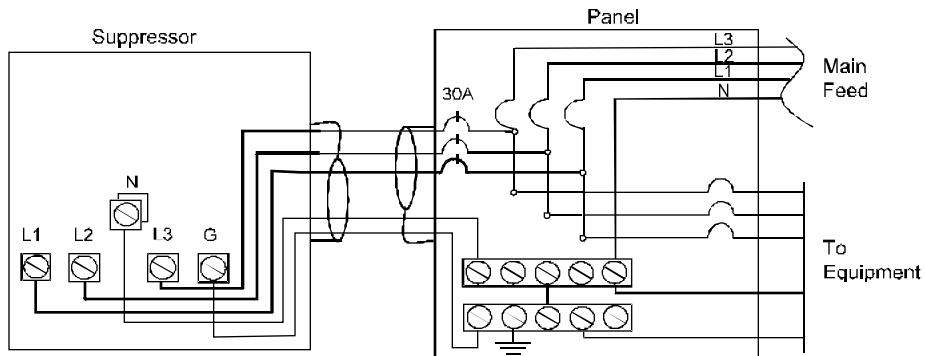


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ZONE SENTINEL[®] Configuration and Schematic Connection Diagrams

SALES MODEL: ZSSP/N PT12101/4/7/8

120/208V THREE PHASE 4W WYE
240/415V THREE PHASE 4W WYE
277/480V THREE PHASE 4W WYE
220/380V THREE PHASE 4W WYE

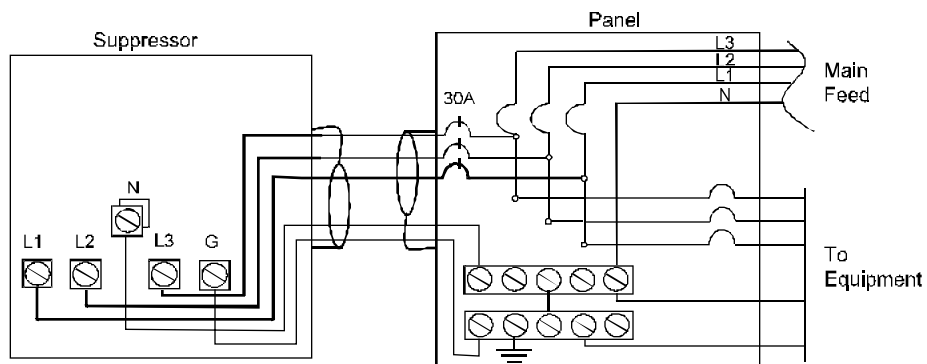


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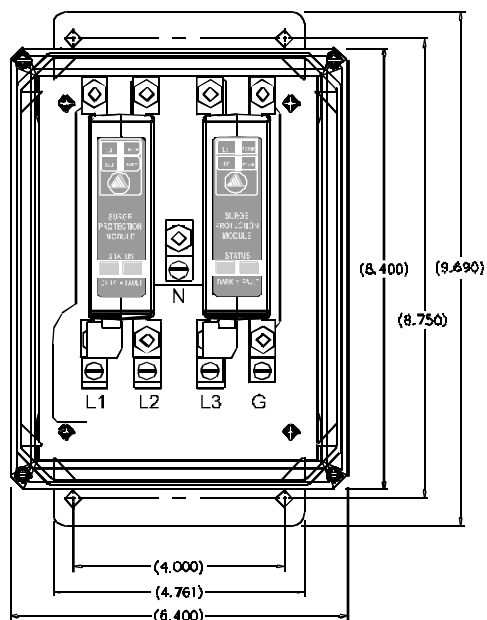
ZONESENTINEL® Configuration and Schematic Connection Diagrams

SALES MODEL: ZSS P/N PT12102

120/240V THREE PHASE 4W HIGH LEG DELTA



***Note: L3 is designated as the "HIGH LEG"**

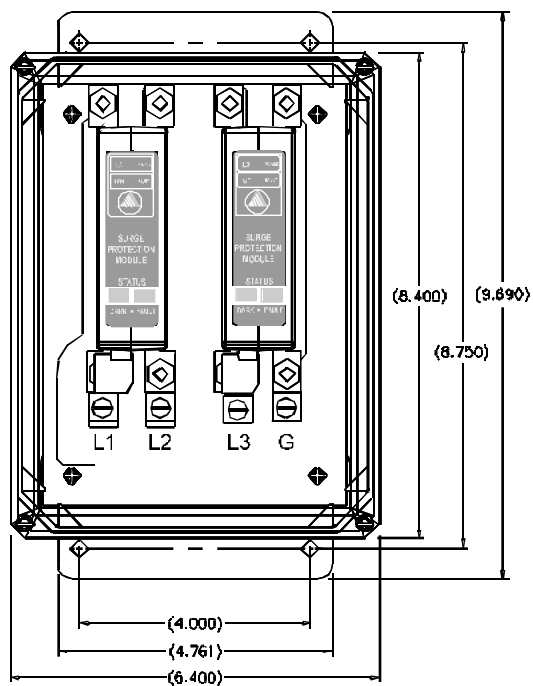
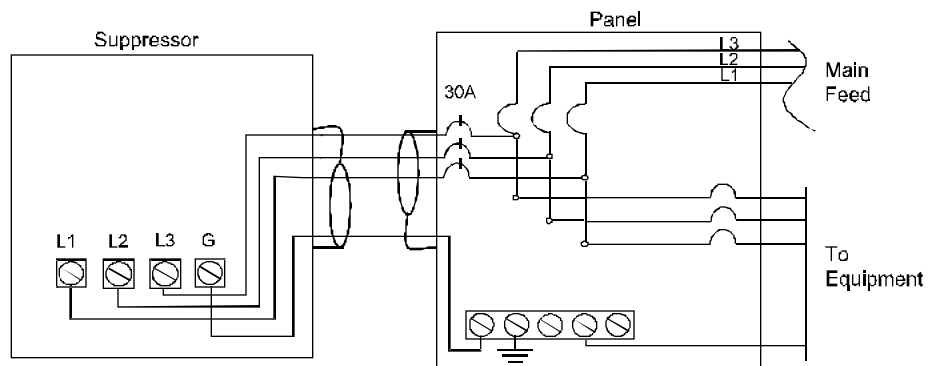


***NOTE: L3 is High Leg 208V**

POWERWARE TVSS **ZONE SENTINEL® Configuration** **and Schematic Connection Diagrams**

SALES MODEL: ZSS P/N PT12103/6

240V THREE PHASE 3W DELTA
 480V THREE PHASE 3W DELTA



MAINTENANCE

At intervals not exceeding two months, check:

1. Status indication lights
2. Conditions of connecting cables and terminals

Module Replacement

WARNING: Before opening the access panel, ensure that the AC supply has been disconnected.

Unplug the remote contact connector at the top of the module. Remove the mounting nuts at the top and bottom of the module. The protection module can now be removed.

WARNING: Replace the defective module with a module having the same model numbers.

Installation of the replacement module is the reverse of the above procedure. Final step, check that all cable connections are secure and nuts are tightened. Do not overtighten.

NOTE: No customer serviceable parts inside. Opening module WILL void Warranty

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