


# ZoneSentinel® range

## AC panel transient voltage surge suppressors

### Introduction

This document explains how to install the ZoneSentinel® range of AC panel surge protective devices.

### Installation instructions

	<b>WARNING</b> 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.
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### Installation description

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 (page 4) on Connecting Lead lengths. Conduit, preferably metallic, is to be installed from the suppressor to the panel. Drill holes in the ZoneSentinel® enclosure only in the designated areas as shown in recommended cable dressing illustrations (page 5). Mount the unit in the appropriate location using the mounting holes provided on the enclosure.

### Overcurrent protection

The ZoneSentinel® can be installed on electrical services without overcurrent protection if the available SCCR is 100k AIC or less. If the SCCR is greater than 100k AIC, coordinated overcurrent protection (30-60A) must be installed.

### Flush mount

The flush mount 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 ZoneSentinel® enclosure can be fixed to a wall stud or suitable upper or lower support. Be sure that the 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.

<b>IMPORTANT</b> Incorrect installation will impair the effectiveness of the AC panel protectors. Particularly important is the length of the connecting leads page.
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### Connecting leads

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

### Recommended wire gauge

Minimum of 8 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:** 19" (500MM)

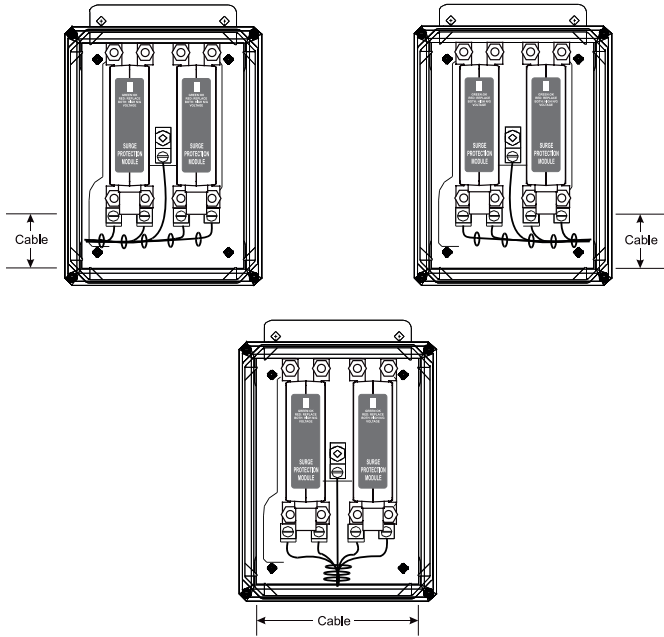
**Ideally:** 10" (250MM)

Each 10" (250mm) increase in cable length; increases clamping voltage by 25V per 1000A surge current discharged.

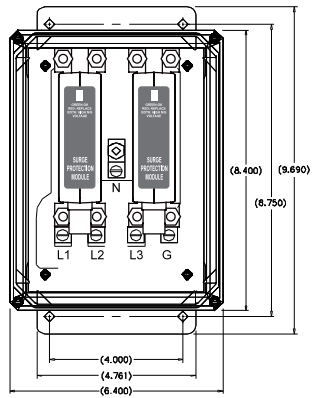
#### IMPORTANT

- 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

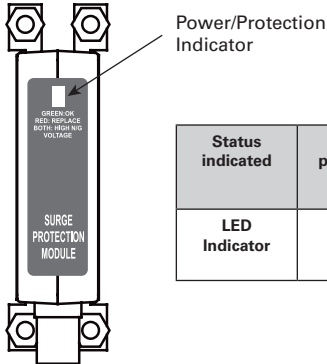


### Dimensions



**Status indicators**

The ZoneSentinel® units have comprehensive, continuous visual status monitoring present on each module.

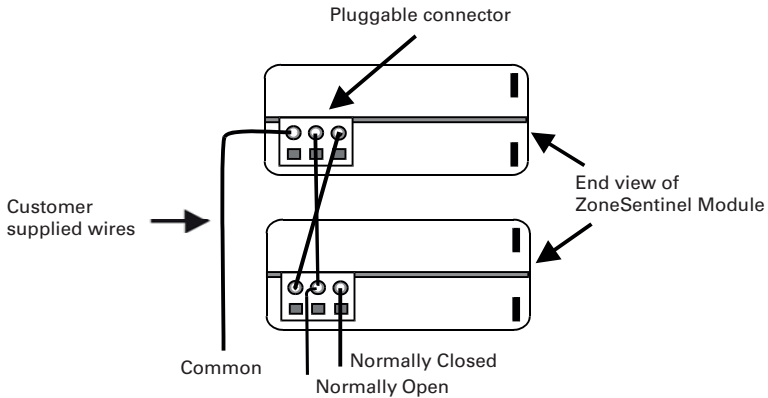


Status indicated	Full protection present	Reduced (Standby) protection	No protection	No power to protection	High N-G Voltage*
LED Indicator	Green LED Lit	Red LED Lit	Red LED Lit	Green LED Out	Red & Green LED Lit

**Remote indicators**

A remote indication of the reduced protection state is available as a normally open or normally closed dry contact "Form C". Rated maximum 1A at 30Vdc resistive and maximum 0.3A at 125Vac (30VA dc or 37.5VA ac) general use. Suitable for connection of AVL2 18AWG to 20AWG copper wire. Recommended tightening torque: 7 in- lbs.

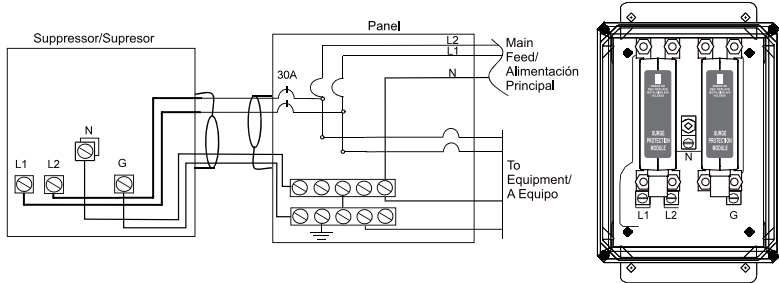
Routing of these wires should be separate from the power with a minimum of spacing of two inches.



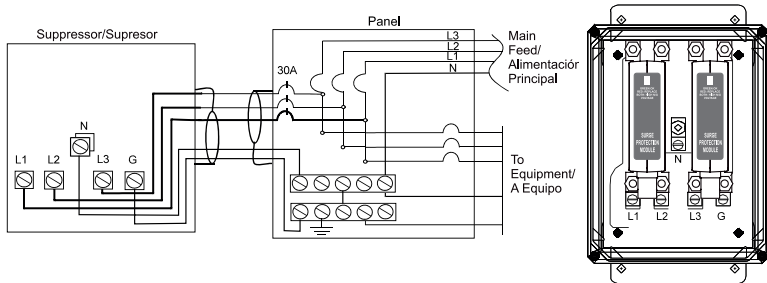
	<p><b>*WARNING</b> OF HIGH NEUTRAL TO GROUND VOLTAGE</p> <p>On certain models, if both Red and Green lights are on, consult a qualified electrical contractor to check the integrity of the building wiring.</p>
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**ZoneSentinel® Configuration  
and schematic connection diagrams**

**120/240V SPLIT PHASE 3W**



**THREE PHASE 4W WYE  
THREE PHASE 4W HI-LEG DELTA  
NOTE: L3 IS HIGH LEG 208V**



## 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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