

# ZoneDefender PRO



The most compact, powerful, feature-rich AC surge protector available.

- 80kA to 240kA surge current rating per phase
- Includes high-performance EMI/RFI filtering
- LED status indication via solid state diagnostics plus remote indication contacts
- Built-in audible alarm
- Thermal and short circuit fusing
- Short circuit current rating: 200k AIC
- UL 1449 2nd Edition Listed, also approved for use within Lightning Protection Systems covered under UL's Master Label Program
- 10 year product warranty



The ZoneDefender PRO Series is a versatile, high performance surge protector designed for use in a wide variety of industrial, institutional and commercial applications. The ZoneDefender PRO is the most compact, powerful, feature-rich surge protector on the market today. State-of-the-art circuitry protects equipment from high frequency noise as well as from damaging electrical transients and high-energy disturbances. In addition, the ZoneDefender PRO Series offers cost-effective high capacity protection along with application versatility; features which make the Series the ultimate surge protection solution.

ZoneDefender PRO units provide protection between Line to Neutral, Line to Ground, Line to Line and Neutral to Ground. Utilizing Metal Oxide Varistor (MOV) technology, the ZoneDefender PRO's protection circuits are highly reliable, dual-redundant varistor networks ensuring your site is never unprotected. Fully automatic in operation, ZoneDefender PRO reacts immediately, clamping voltage surges

without causing undue leakage losses under normal operation. No operator intervention is required, ZoneDefender PRO resets automatically and is maintenance free.

**Suitable for all AC power applications,** ZoneDefender PRO devices provide protection for AC power supplies with no restriction to the amount of load current.

**Thermal fusing is incorporated** into each ZoneDefender PRO as an additional safety feature. Short circuit protection with 200kA AIC rating is also supplied, as standard, for added peace of mind.

ZoneDefender PRO offers an **LED Status indication** allowing each varistor network to be continually monitored and indicated by LEDs on the front panel of the device. In addition, remote monitoring is enabled by the unit's remote indication contacts.

**Installation is simple** - the

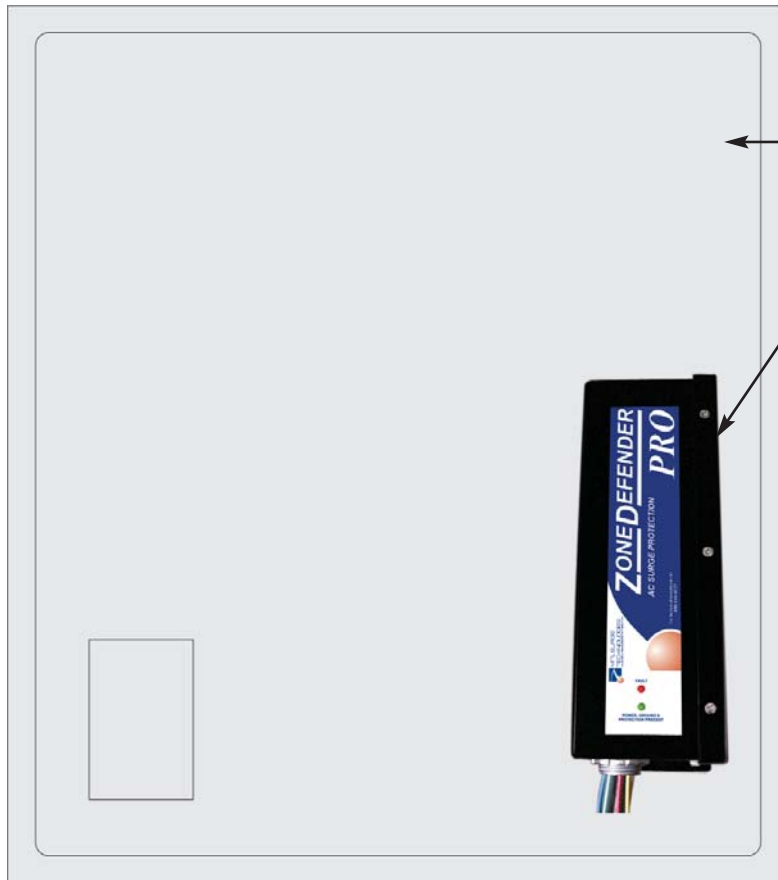
NEMA 4X enclosure of the ZoneDefender PRO devices can be easily surface or nipple mounted.

The ZoneDefender PRO Series is **UL 1449 2nd Edition Listed** and also approved for use within Lightning Protection Systems covered under UL's Master Label Program. It boasts an unrivaled 10 year 'no questions asked' manufacturers product warranty. ZoneDefender PRO devices also exceed the requirements of ANSI/IEEE C62.45 and ANSI/IEEE C62.41.

## AC Power Protection

# Smallest Footprint on the Market

## Compare



Typical 200kA SPD (17.5" x 15.5").  
Footprint area required = 271 sq. inches

ZoneDefender PRO 200kA (9.3" x 3.0").  
Footprint area required = 27.8 sq. inches

ZoneDefender PRO requires 90% LESS footprint area!

### NOTE:

No Additional Enclosure Required!

ZoneDefender PRO is NEMA 4X, IP66 Rated as standard.

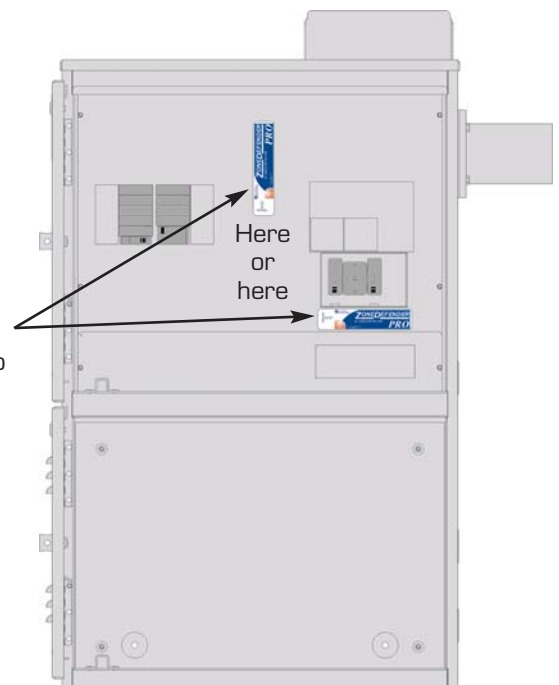
## Small size makes integration into custom equipment a breeze.

ZoneDefender PRO saves money by facilitating smaller AC power cabinets. Once the ZoneDefender Pro has been engineered in, there is no re-engineering needed to meet customers changing surge capacity requirements.

Great for:



- ◆ Telecom power distribution cabinets
- ◆ Industrial control panels
- ◆ Motor drive panels
- ◆ Automatic transfer switch
- ◆ Facility distribution panels

Can be custom designed into any available space.



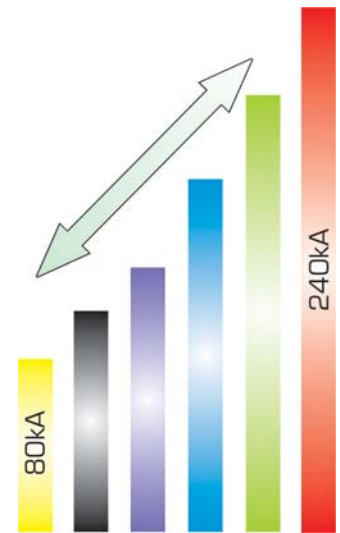
# Advanced indication and monitoring



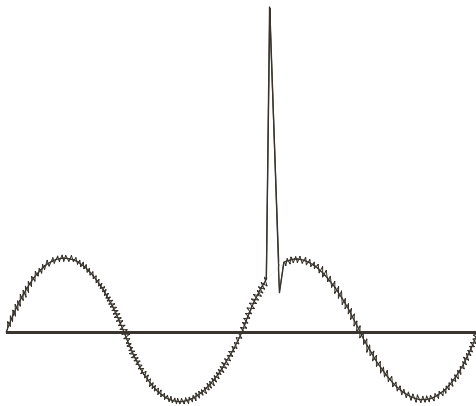
- Red LED = Fault warning  
 Advanced circuitry monitors **every** suppression component in the ZoneDefender PRO.
- Green LED = Protection operational and ground present  
 Assures user that full protection is present. Advanced circuitry continuously monitors the presence of a ground connection.
-  Any fault in the unit triggers an audible alarm. Great for units hidden from view.
-  Normally open, normally closed, voltage free contacts are a standard feature on all ZoneDefender PROs.

# Powerful surge protection

- ◆ Surge capacity options to cover every requirement *and budget.*
- ◆ An unmatched range of surge current capacities available in the same compact package.
- ◆ The same small footprint (9.3" x 3.0") for all six (6) surge capacity types.



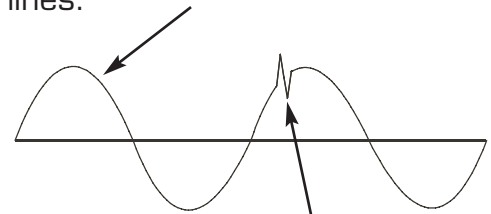
# Precise power protection



*Before* ZoneDefender PRO



High performance EMI/RFI Filter attenuates noise on AC power lines.



State-of-the-art surge protection reduces transient voltages to harmless levels.

*After* ZoneDefender PRO

# Specification

All figures typical at 77°F (25°C) unless otherwise stated

## Maximum surge current ( $I_{max}$ )

80kA/100kA/120kA (8/20 $\mu$ s)  
160kA/200kA/240kA (8/20 $\mu$ s)

## Maximum continuous operating voltage

120/240 versions 140Vac  
120/208 versions 140Vac  
277/480 versions 320Vac  
220/380 versions 300Vac  
240/415 versions 300Vac

## Lines protected AC

L-N, L-G, L-L, N-G

## Duty cycle performance (8/20 $\mu$ s)

Rated 1 impulse  
10,000A >6,500 Impulses  
100A infinite

## Long duration current pulse (10/1,000 $\mu$ s) capability

3,600A (tested)

## Ambient temperature limits

-40°F to +185°F - working  
-40°C to +85°C - working

## Humidity

95% RH (non-condensing)

## Enclosure

NEMA 1, 2, 3, 3R, 4, 4X, 12 and 13 (IP66)

## Terminals

#10 AWG (5mm<sup>2</sup>) & #8 AWG (8mm<sup>2</sup>)

## Mounting

Surface mount by 0.21" (5mm) diameter holes

## Remote contacts

Form C (NC, NO, C) 125Vac, 3A rated

## Indication

Green LED on } Power and ground present, full protection in all modes, all phases  
Red LED off }  
Green LED off } Loss of power or loss of ground  
Red LED off } (remote indication warning, via contacts)  
Green LED off } Protection fault (remote indication  
Red LED on } alarm via contacts & audible alarm)

## Audible Alarm

90dB

## EMI/RFI Attenuation

-75dB maximum 100kHz to 100MHz

## Weight

From 5.2 lbs (2.34Kg)

## Dimensions

9.30" x 3.00" x 4.93"  
(236mm x 76mm x 125mm)

## SCCR Rating

Suitable for use on a circuit capable of delivering not more than 200,000 rms symmetrical Amperes, 480V maximum

## EMC compliance

BS EN 60950: 1992  
BS EN 61000-6-2: 1999

Ratings in compliance with IEC 61643-1

$I_{max}$  = 80kA, 100kA, 120kA  
 $I_{imp}$  = 6kA (10/350)\*  
 $I_{max}$  = 160kA, 200kA, 240kA  
 $I_{imp}$  = 10kA (10/350)\*

\*All current results are per phase.

Model	Working voltage (V)	UL1449 Listing (V)	Let-through voltage		$U_p$ (kV)	Ringwave @ 200A (V)	Phase types
			@ 3kA+ (V)	@ 10kA+ $I_n$ (V)			
<b>80kA versions</b>							
16100	120/240	400	470	780	0.8	60	Split phase 3 wire
16101	120/208	400	470	780	0.8	60	Three phase 4 wire WYE
16104	277/480	800	890	1200	1.2	75	Three phase 4 wire WYE
16107	220/380	800	890	1200	1.2	75	Three phase 4 wire WYE
16108	240/415	800	890	1200	1.2	75	Three phase 4 wire WYE
<b>100kA versions</b>							
16200	120/240	400	470	780	0.8	60	Split phase 3 wire
16201	120/208	400	470	780	0.8	60	Three phase 4 wire WYE
16202	120/240	400/800	470/890	780/1200	0.8/1.2	60/75	Three phase 4 wire Delta
16204	277/480	800	890	1200	1.2	75	Three phase 4 wire WYE
16207	220/380	800	890	1200	1.2	75	Three phase 4 wire WYE
16208	240/415	800	890	1200	1.2	75	Three phase 4 wire WYE
<b>120kA versions</b>							
16300	120/240	400	470	780	0.8	60	Split phase 3 wire
16301	120/208	400	470	780	0.8	60	Three phase 4 wire WYE
16302	120/240	400/800	470/890	780/1200	0.8/1.2	60/75	Three phase 4 wire Delta
16304	277/480	800	890	1200	1.2	75	Three phase 4 wire WYE
16307	220/380	800	890	1200	1.2	75	Three phase 4 wire WYE
16308	240/415	800	890	1200	1.2	75	Three phase 4 wire WYE
<b>160kA versions</b>							
16400	120/240	400	430	650	0.7	50	Split phase 3-wire
16401	120/208	400	430	650	0.7	50	Three phase 4-wire WYE
16402	120/240	400/800	430/770	650/1180	0.7/1.2	50/68	Three phase 4 wire Delta
16404	277/480	800	770	1180	1.2	68	Three phase 4-wire WYE
16407	220/380	800	770	1180	1.2	68	Three phase 4-wire WYE
16408	240/415	800	770	1180	1.2	68	Three phase 4-wire WYE
<b>200kA versions</b>							
16500	120/240	400	430	650	0.7	50	Split phase 3-wire
16501	120/208	400	430	650	0.7	50	Three phase 4-wire WYE
16502	120/240	400/800	430/770	650/1180	0.7/1.2	50/68	Three phase 4 wire Delta
16504	277/480	800	770	1180	1.2	68	Three phase 4-wire WYE
16507	220/380	800	770	1180	1.2	68	Three phase 4-wire WYE
16508	240/415	800	770	1180	1.2	68	Three phase 4-wire WYE
<b>240kA versions</b>							
16600	120/240	400	430	650	0.7	50	Split phase 3-wire
16601	120/208	400	430	650	0.7	50	Three phase 4-wire WYE
16602	120/240	400/800	430/770	650/1180	0.7/1.2	50/68	Three phase 4 wire Delta
16604	277/480	800	770	1180	1.2	68	Three phase 4-wire WYE
16607	220/380	800	770	1180	1.2	68	Three phase 4-wire WYE
16608	240/415	800	770	1180	1.2	68	Three phase 4-wire WYE

†8/20 $\mu$ s waveform - Tested as per ANSI/IEEE C62.45 and ANSI/IEEE C62.41

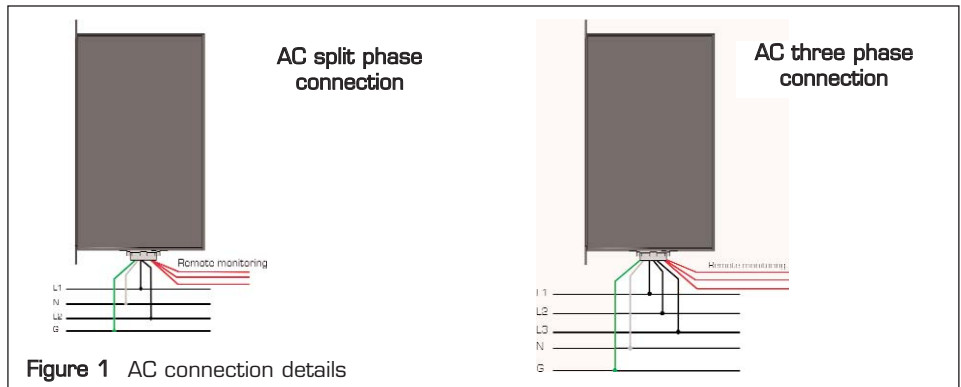
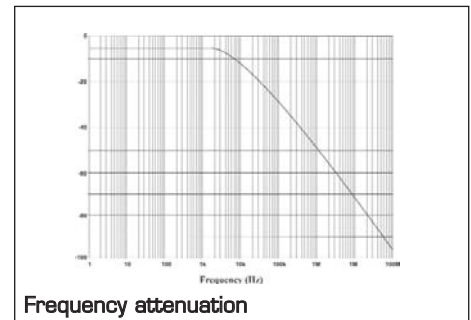
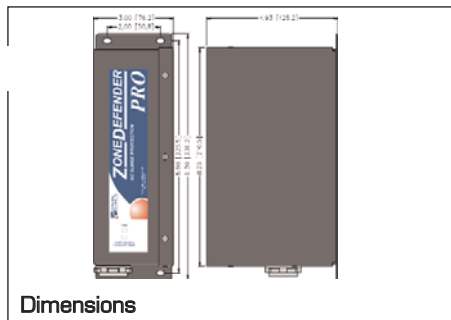


Figure 1 AC connection details

## To order specify -

Model number as per specification table

## Approvals

Country	Standard/Authority	Approved for	Product
United States Canada	UL 1449 2nd Edition Listed (C-UL US Listed)	AC power product	ZoneDefender PRO
United States Canada	UL 1449 2nd Edition Listed (C-UL US Listed)	Master Labeled LPS	ZoneDefender PRO