

# ZoneDefender<sup>2</sup>

80kA power surge protection for small distribution panels, tower lights, equipment cabinets and confined spaces



- **AC or DC application**
- **Straightforward and simple installation – wall or flush mounting**
- **LED status indication via solid state diagnostics plus remote indication contacts**
- **Thermal and short circuit fusing**
- **UL 1449 Listed**
- **10 year product warranty**



**The ZoneDefender<sup>2</sup> Series** of power surge protection devices has been specifically designed for small distribution panels. These compact and durable devices offer cost effective, high capacity protection along with application versatility, features which make the Series the ultimate surge protection solution.

**ZoneDefender<sup>2</sup> units, with a 80kA surge handling capability** per phase, provide protection between Line to Neutral, Line to Ground/Earth, Line to Line and Neutral to Ground/Earth. Utilizing Metal Oxide Varistor (MOV) technology, the ZoneDefender's protection circuits are highly reliable, dual-redundant varistor networks ensuring your site is never unprotected. Fully automatic in operation, ZoneDefender<sup>2</sup> reacts immediately, clamping voltage surges without causing undue leakage losses under normal operation. No operator intervention is required, ZoneDefender<sup>2</sup> resets automatically and is maintenance free.

**Suitable for AC or DC applications,** ZoneDefender<sup>2</sup> devices provide protection for AC or DC power supplies with no restriction to the amount of load current. ZoneDefender<sup>2</sup> DC versions are available utilizing SAD (Silicon Avalanche Diode) technology in addition to the standard MOVs. DC versions are also available with EMI filtering, should this be required.

**Thermal fusing is incorporated** into each ZoneDefender<sup>2</sup> as an additional safety feature. Short circuit protection is also supplied, as standard, for added peace of mind.

**ZoneDefender<sup>2</sup> offers an LED Status indication facility** 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 units' remote indication contacts.

**Installation is simple** - the enclosure of ZoneDefender<sup>2</sup> devices can be easily 'wall mounted'.

**The ZoneDefender<sup>2</sup> Series is UL 1449 Listed** and boasts an unrivalled 10 year 'no questions asked' manufacturers product warranty. ZoneDefender<sup>2</sup> devices also exceed the requirements of ANSI/IEEE C62.45 and ANSI/IEEE C62.41.

## AC & DC Power Protection

# Specification

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

## Maximum surge current

80kA (8/20 $\mu$ s)\*  
 \*except ZoneDefender<sup>®</sup> DC versions.  
 See specifications table for details.

## Lines protected AC

L-N, L-G/E, L-L, N-G/E

## Lines protected DC

V+, V-

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

80,000A 1 impulse  
 10,000A >4,000 impulses  
 100A infinite

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

3,600A (tested)

## Response time

<5ns

## Ambient temperature limits

-40°F to +185°F (-40°C to +85°C) – working

## Humidity

95% RH (non-condensing)

## Enclosure

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

## Terminals

12 AWG (3mm<sup>2</sup>)

## Mounting

Surface mount by four 0.17" (4mm) diameter holes  
 Optional flush mount (add suffix "F" to Model number)

## Remote contacts

C, NO, NC rated 60W DC or 120VA AC, 3A max.

## Indication

Green LED on Protection present  
 Green LED off Internal failure or no power  
 Red LED on Internal failure

## Weight

2.1 lbs (0.94Kg)

## Dimensions

4.0" x 4.0" x 2.4"  
 (102mm x 102mm x 61mm)

## AIC Rating

Suitable for use on a circuit capable of delivering not more than 100,000 rms symmetrical Amperes, 240V maximum

## EMC compliance

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

Model	Working voltage (V)	UL 1449 Listing (V)	Limiting voltage		Max. continuous operating voltage (Vac)	Phase types
			@ 3kA† (V)	@ 10kA (In)† (V)		
<b>AC versions</b>						
ZD16800*	120	400	430	690	140	Single phase 2-wire US
ZD16801*	120/240	400	430	690	140	Split phase 3-wire US
ZD16809‡	240	800	925	1200	320	Single phase 2-wire EU
ZD16820	120	400/800	430/925	690/1200	140/320	Single phase 2-wire TT
ZD16821	120/240	400/800	430/925	690/1200	140/320	Single phase 3-wire TT
<b>DC versions</b>						
ZD14612	12V DC	N/A	120	292	15kA	—
ZD14624	24V DC	N/A	140	340	36kA	—
ZD14648	48V DC	N/A	280	504	53kA	—
ZD14712	12V DC	N/A	120	292	15kA	EMI filter
ZD14724	24V DC	N/A	140	340	36kA	EMI filter
ZD14748	48V DC	N/A	280	504	53kA	EMI filter

For flush mount add suffix "F" to model number

\*Suitable for U.S. use only †8/20 $\mu$ s waveform — Tested as per ANSI/IEEE C 62.45 and ANSI/IEEE C62.41

‡ Not UL Listed

**NOTE:** ZD14712, ZD14724 & ZD14748 have > -30dB attenuation @ 100kHz

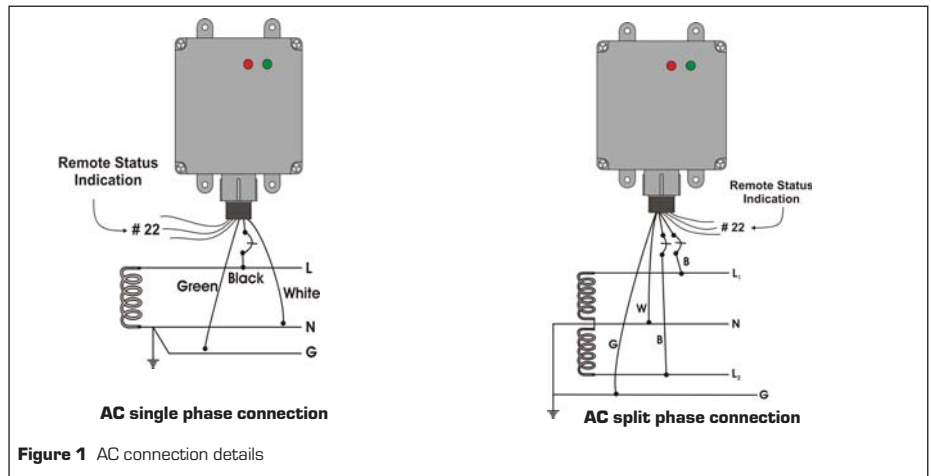


Figure 1 AC connection details

## To order specify -

As per table above.

Note: In accordance with our policy of continuous improvement, we reserve the right to change the product's specification without notice.

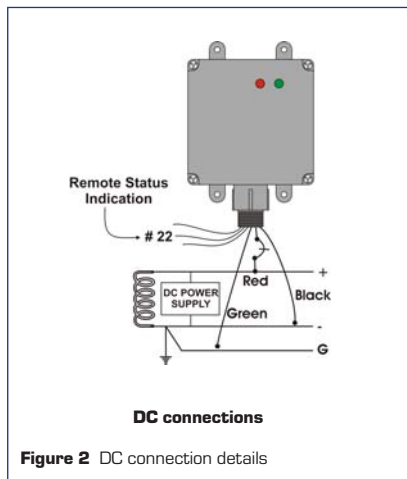


Figure 2 DC connection details

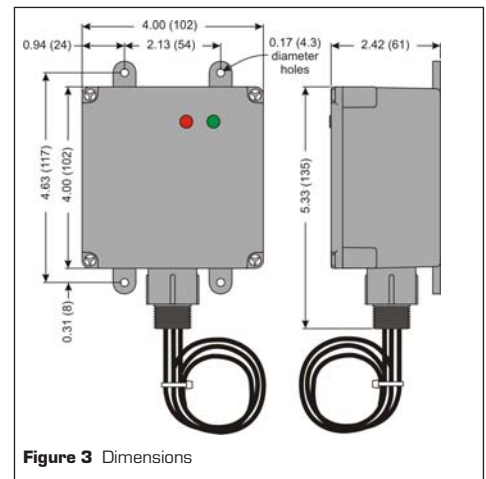


Figure 3 Dimensions

## Approvals

Standard/Authority	Approved for	Product
UL 1449 Listed (C-UL US Listed)	AC power product	ZD16800, ZD16801, ZD16820, ZD16821