



technical datasheet

ZoneDefender Pro Series

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 3rd Edition Listed
- 10 year product warranty
- UL1449 Type 2 SPD, $I_n=20kA$



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 ZoneDefender PRO devices can be easily surface or nipple mounted.

The ZoneDefender PRO Series is UL 1449 3rd Edition Listed and 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.

Meets UL96A installation requirements for lightning protection systems for master label certification.

901-104 Rev 0 190411

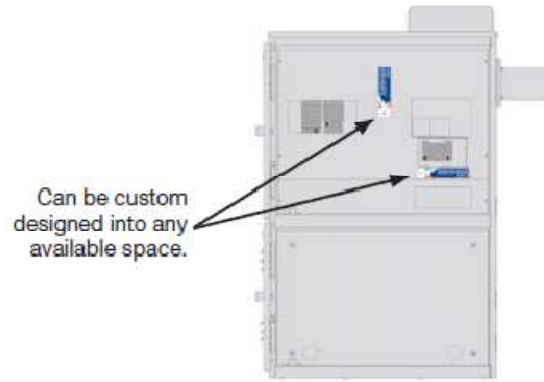
www.mtl-inst.com
enquiry@mtl-inst.com

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



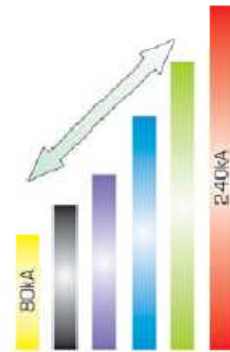
ADVANCED INDICATION AND MONITORING



- 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.

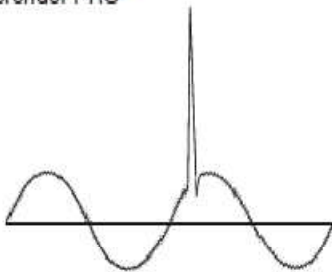
POWERFUL SURGE PROTECTION

- ◆ 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.

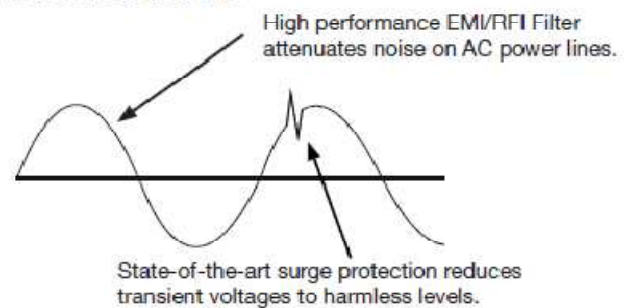


PRECISE POWER PROTECTION

Before ZoneDefender PRO



After ZoneDefender PRO



The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantees. In the interest of further technical developments, we reserve the right to make design changes.



EUROPE (EMEA): +44 (0)1582 723633
enquiry@mtl-inst.com

THE AMERICAS: +1 800 835 7075
csinfo@mtl-inst.com

ASIA-PACIFIC: +65 6 487 7887
sales@mtlsing.com.sg

901-104 Rev O 190411

Model	Working voltage (V)	UL1449 VPR 3rd Edition (V)	Limiting voltage		U _p (kV)	Ringwave @200A (V)	Phase types
			@ 3kA (V)	@10Ka (I _n) (V)			
80kA versions							
ZD16100	120/240	500	470	780	0.8	60	Split phase 3 wire
ZD16101	120/208	500	470	780	0.8	60	Three phase 4 wire WYE
ZD16104	277/480	1200	890	1200	1.2	75	Three phase 4 wire WYE
ZD16107	220/380	1200	890	1200	1.2	75	Three phase 4 wire WYE
ZD16108	240/415	1200	890	1200	1.2	75	Three phase 4 wire WYE
100kA versions							
ZD16200	120/240	500	470	780	0.8	60	Split phase 3 wire
ZD16201	120/208	500	470	780	0.8	60	Three phase 4 wire WYE
ZD16202	120/240	500/1200	470/890	780/1200	0.8/1.2	60/75	Three phase 4 wire Delta
ZD16204	277/480	1200	890	1200	1.2	75	Three phase 4 wire WYE
ZD16207	220/380	1200	890	1200	1.2	75	Three phase 4 wire WYE
ZD16208	240/415	1200	890	1200	1.2	75	Three phase 4 wire WYE
120kA versions							
ZD16300	120/240	500	470	780	0.8	60	Split phase 3 wire
ZD16301	120/208	500	470	780	0.8	60	Three phase 4 wire WYE
ZD16302	120/240	500/1200	470/890	780/1200	0.8/1.2	60/75	Three phase 4 wire Delta
ZD16304	277/480	1200	890	1200	1.2	75	Three phase 4 wire WYE
ZD16307	220/380	1200	890	1200	1.2	75	Three phase 4 wire WYE
ZD16308	240/415	1200	890	1200	1.2	75	Three phase 4 wire WYE
160kA versions							
ZD16400	120/240	500	430	650	0.7	50	Split phase 3-wire
ZD16401	120/208	500	430	650	0.7	50	Three phase 4-wire WYE
ZD16402	120/240	500/1200	430/770	650/1180	0.7/1.2	50/68	Three phase 4 wire Delta
ZD16404	277/480	1200	770	1180	1.2	68	Three phase 4-wire WYE
ZD16407	220/380	1200	770	1180	1.2	68	Three phase 4-wire WYE
ZD16408	240/415	1200	770	1180	1.2	68	Three phase 4-wire WYE
200kA versions							
ZD16500	120/240	500	430	650	0.7	50	Split phase 3-wire
ZD16501	120/208	500	430	650	0.7	50	Three phase 4-wire WYE
ZD16502	120/240	500/1200	430/770	650/1180	0.7/1.2	50/68	Three phase 4 wire Delta
ZD16504	277/480	1200	770	1180	1.2	68	Three phase 4-wire WYE
ZD16507	220/380	1200	770	1180	1.2	68	Three phase 4-wire WYE
ZD16508	240/415	1200	770	1180	1.2	68	Three phase 4-wire WYE
240kA versions							
ZD16600	120/240	500	430	650	0.7	50	Split phase 3-wire
ZD16601	120/208	500	430	650	0.7	50	Three phase 4-wire WYE
ZD16602	120/240	500/1200	430/770	650/1180	0.7/1.2	50/68	Three phase 4 wire Delta
ZD16604	277/480	1200	770	1180	1.2	68	Three phase 4-wire WYE
ZD16607	220/380	1200	770	1180	1.2	68	Three phase 4-wire WYE
ZD16608	240/415	1200	770	1180	1.2	68	Three phase 4-wire WYE

The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee. In the interest of further technical developments, we reserve the right to make design changes.



SPECIFICATION

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

Maximum surge current (I_{max})

80kA/100kA/120kA (8/20 μ s)
160kA/200kA/240kA (8/20 μ 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 μ s)

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

Long duration current pulse (10/1,000 μ s) capability

3,600A (tested)

Ambient temperature limits (working)

-40°F to +185°F (-40°C to +85°C)

Humidity

95% RH (non-condensing)

Enclosure

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

Terminals

#10 AWG (5mm²) & #8 AWG (8mm²)

Mounting

Surface mount by 0.21" (5mm) diameter holes

Remote contacts

Form C (NC, NO, C) 60W DC, 120VA AC, 3A max.

Indication

Green LED on	} Power protection in all modes, all phases
Red LED off	
Green LED off	} Protection fault (remote indication alarm via contacts & audible alarm)
Red LED on	
Green LED on	} Neutral/ground fault (voltage potential)
Red LED on	

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 max

EMC compliance

BS EN 60950-1:2010
BS EN 61000-6-2:2005

Ratings in compliance with IEC 61643-11

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.

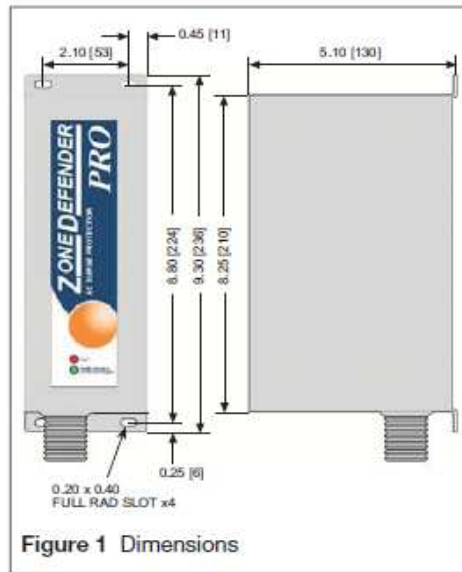


Figure 1 Dimensions

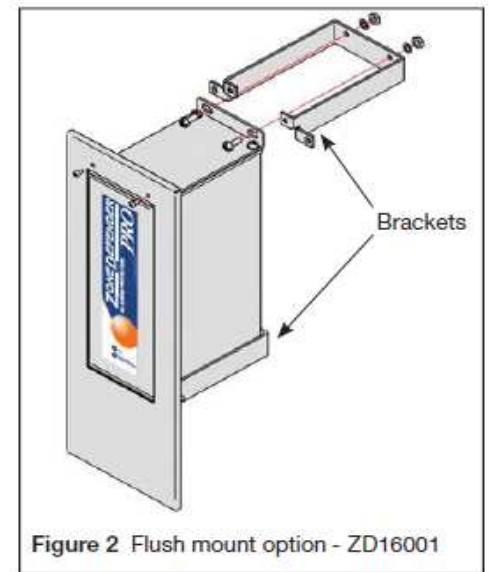


Figure 2 Flush mount option - ZD16001

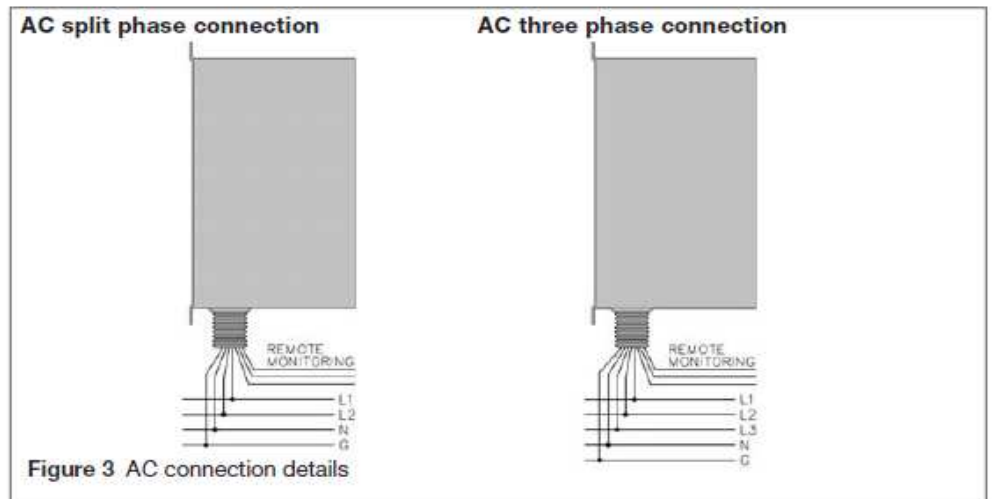


Figure 3 AC connection details

APPROVALS

Country	Standard/Authority	Approved for	Product
Europe	BS EN 60950-1:2010 BS EN 61000-6-2:2005	AC power product	ZoneDefender PRO
Global	IEC 61643-11	Class II	ZoneDefender PRO
United States Canada	UL 1449 3rd Edition Listed (C-UL US Listed)	AC power product	ZoneDefender PRO

The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee. In the interest of further technical developments, we reserve the right to make design changes.



EUROPE (EMEA): +44 (0)1582 723633
enquiry@mti-inst.com

THE AMERICAS: +1 800 835 7075
csinfo@mti-inst.com

ASIA-PACIFIC: +65 6 487 7887
sales@mtising.com.sg

901-104 Rev O 190411