WIREMOLD

legrand®

ZoneMaster®

All New ZoneMaster® Series Configurable Hard-Wired Surge Protection Devices

Protect your facility from the destructive effects of power surges with a fully configurable panel protection solution from The Wiremold Company. The all new ZoneMaster® Series is fully configurable with a complete range of options including an internal or fused disconnect, noise filter, surge counter, and remote monitoring capabilities.

You can easily tailor a ZoneMaster Series solution to provide surge protection for basic or the most advanced applications. Panelboard Extension units are now available for situations where available space near the panelboard cannot accommodate an external surge protector. Both external surge protectors and panelboard extension units protect all standard electrical service voltages. Units are available for subpanel protection starting at 90kA, and ranging up to 450kA protection for main distribution panels.

ZoneMaster Series configurable hard-wired surge protection devices are an integral part of the Sentrex Zoned Approach to whole building protection.

ZoneMaster 300

Features & Benefits

- **Up to 450kA maximum surge current protection.**
- **All mode protection standard on all units.**
- **Replaceable bolt-in modules.**
- **NEMA 1, 2, 3, 3S, 4, 4X, 12, 13 rated fire-resistant plastic enclosure.**
- **Panel Extension Units feature NEMA 1 rated, corrosion-resistant painted metal enclosure.**
- **Integrated diagnostics.** Each module provides visual indication of its operating status.
- **Massive large block MOVs.** Each module contains two independent large block MOVs, each consisting of dual 40mm MOVs. This configuration far exceeds the capability of 20mm MOVs in parallel to manage long duration surges.
- **Dual short circuit and thermal fusing.**
- **Low impedance construction.**
- **Eutectic alloy thermal fuse.** Passes UL1449 Second Edition standards. Also withstands lightning surge currents. Performance proven by independent testing.
- **No standard thermal cutouts.** Standard thermal cutouts can fail at surge currents as low as 10kA.
- **Neutral-to-ground protection module with leakage indicators.**
- **Low let-through performance with high current impulse.**
- **NO/NC dry contacts.**
- **Independently tested per NEMA LS1 standards.**
- **Ten-Year Product Warranty.** Wiremold will replace any defective/failed unit or module free of charge (labor and site preparation excluded) for a period of ten years.
- **UL1449 Second Edition Listed.**
- c UL us

Available Options

- **Panelboard Extension Model.** Can also function as standalone unit with metal case.
- **Remote monitoring unit.**
- **EMI/RFI noise filter.**
- **Multi-mode surge counter.**
- **Internal or fused disconnect.**
- **Flush mount cover**.

(See inside for more details.)

Hard Wired Surge Protection Selection Matrix

All ZoneMaster and Zone Sentinel Units feature all-mode protection.

ZoneMaster PE (Panel Extension) Series can be used as panel extension or as a standalone unit. PE units include a metal case, filter, surge counter, and internal alarm standard.

S = Standard
O = Optional

Hard Wired Surge Protection Units						
Electrical Service	**ZoneMaster 450 450kA**	**ZoneMaster 300 300kA**	**ZoneMaster 300 PE 300kA**	**ZoneMaster 180 180kA**	**ZoneMaster 180 PE 180kA**	**ZoneSentinel 90 90kA**
120/240V, Single Ø	ZE120T	ZC120T	ZCM120T	ZB120T	ZBM120T	ZA120T
120/208V, 3Ø Wye	ZE120Y	ZC120Y	ZCM120Y	ZB120Y	ZBM120Y	ZA120Y
277/480V, 3Ø Wye	ZE277Y	ZC277Y	ZCM277Y	ZB277Y	ZBM277Y	ZA277Y
OPTIONS						
A – Remote Alarm	O	O	O††	O	O††	O
B – Filter	O	O	S	O	S	O
C – Surge Counter	O	O* **	S	N/A	S	N/A
D – Internal Disconnect	S	O*	O	N/A	O	N/A
F – Fused Disconnect	O†	O*	O	N/A	O	N/A
G – Flush Mount	N/A	N/A	O	N/A	O	O

** Selecting any of options C, D or F changes case size to 16" x 14" x 7" [41cm x 36cm x 18cm].*
*** Option requires selection of either D or F in 300 Series only.*
† Internal Disconnect is standard, substitute Fused Disconnect at no additional charge.
†† PE units include standard internal alarm. Remote alarm option extra.

How to Create a Part Number

1. Select base part number by choosing kA and Electrical Service.
2. Select options if desired (Options marked as standard are not incorporated into the part number).
3. Part number is BASE number, followed by HYPHEN, followed by OPTIONS in alphabetical order.

SAMPLE

300kA for 120/240V with Surge Counter and Internal Disconnect

Part# ZC120T-CD

SAMPLE

180kA Panel Extension for 277/480V with Remote Alarm

Part# ZBM277Y-A

SAMPLE

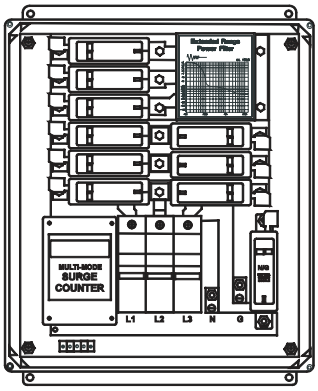
90kA for 120/208V No Options Selected

Part# ZA120Y

NOTE: *Because ZoneMaster 180 PE includes Filter and Surge Counter standard, they are not incorporated into the part number.*

ZoneMaster 450

The ZoneMaster 450 Series is designed to protect a high-exposure main service entrance against the most extreme transient environment. Dual protection circuits provide redundancy ensuring the site is always protected. Engineered to provide decades of uninterrupted surge protection, the ZoneMaster 450 provides the lowest suppression voltages available and full protection in all modes (L-N, L-G, L-L, and N-G).



ZoneMaster 450 Options

- **Standard internal disconnect.** With optional fused disconnect at no additional charge.
- **Remote monitoring unit.**
- **EMI/RFI noise filter.** Noise attenuation -75dB maximum 100 kHz to 100 MHz.
- **Multi-mode surge counter.**

See page 15 for complete specifications on options.

Mechanical Specifications:

ZoneMaster 450 is 20% to 50% smaller in size than other protectors claiming similar performance. Small size means easier installation and a better installation since the protector can often be located closer to the panel thereby minimizing the effect of connecting lead length.

Enclosure:	Durable, lightweight, corrosion resistant high impact plastic. Ultraviolet stabilized UL94-5V rated. NEMA 1, 2, 3, 3S, 4, 4X 12, and 13. Transparent cover for maximum visibility and safety.
Dimensions:	16" x 14" x 7" (41cm x 36cm x 18cm).
Weight:	Approx. 20 lbs. (9 kg)
Operating Environment:	-40°C to 85°C, 95% relative humidity (non-condensing)
Construction:	Ultra low impedance assembly. Modules are bolted to a corrosion resistant, tin plated copper bus bar. No plug-in modules in the surge path.
Terminal Lugs:	#2 AWG max wire size
Mounting:	0.31" (8mm) diameter holes 16 3/4" x 12" [43cm x 30cm]. Enclosure can be easily drilled for conduit/cable access.
Module Replacement:	Power should be disconnected prior to module replacement. Remove two 1/4" nuts, unplug remote indication connector and remove module. Estimated replacement time 2 minutes.
Module Dimensions:	1 1/4" x 5 5/16" x 2 1/2" [3.2cm x 13.5cm x 6.4cm]

Electrical Specifications

	MAXIMUM SURGE CURRENT FOR EACH PROTECTION MODE				MAXIMUM SURGE CURRENT PER PHASE
	L-N	L-G	L-L	N-G	
ZONEMASTER 450	300,000A	150,000A	450,000A	75,000A	450,000A

Electrical Specifications:

Maximum Continuous Operating Voltage:	25% above nominal
Remote Indication Contacts:	NO/NC, 125VAC, 2A rated
Module Diagnostics:	Protection present – Green LED. Fault warning – Mechanical flag (fuse link operated). High voltage neutral to ground – Red LED.
Protection Technology:	Patented large block, three terminal MOVs.
Module Protection:	Dual thermal and short circuit fusing mechanisms; UL94-5V rated plastic enclosure.
Standard Internal Disconnect:	600VAC, 200,000A RMS Symmetrical Rating. Optional fused disconnect features 200,000 AIC fusing.
Redundant Protection Stages in all Modes:	Each module contains dual independent redundant protection circuits.

Duty Cycle Performance (Surge Life)

	MAXIMUM SURGE CURRENT PER MODE	REPETITIVE SURGE CURRENT (≥4 IMPULSES PER MODE)	MAXIMUM NUMBER OF CURRENT IMPULSE AT 10,000 (8/20)	LONG DURATION SURGE CURRENT (10/1,000 µS)
ZONEMASTER 450	300,000A	200,000A	3,500	5,800A

NOTE: *Maximum surge current ratings and repetitive ratings are the result of independent testing.*

The extensive independent testing performed on ZoneMaster 450 with multiple test waveforms confirms ZoneMaster 450 will tolerate and protect against the most severe electrical environments. This evidence is supported by extensive field experience in areas known for lightning activity such as Africa and the Far East.

Surge Protection Performance:

The key performance parameter of any surge protector is how well it controls surges. At the service entrance and main panel, the lower the voltage let-through to the facility the better the protection. A high let-through voltage at the facility entrance will stress other equipment and small surge protectors located within the facility.

120V Models With Fused Disconnect

	INDEPENDENT UL1449 SUPPRESSED VOLTAGE RATINGS				ANSI/IEEE C 62.41 ANSI/IEEE C 62.45 LET-THROUGH VOLTAGE			
PRODUCT SERIES	**L-N**	**L-G**	**L-L**	**N-G**	**B1**	**B2**	**B3**	**C3**
ZONEMASTER 450 w/FILTER	330V	330V	700V	400V	300V	333V	360V	517V
ZONEMASTER 450 w/o FILTER	400V	400V	800V	400V				

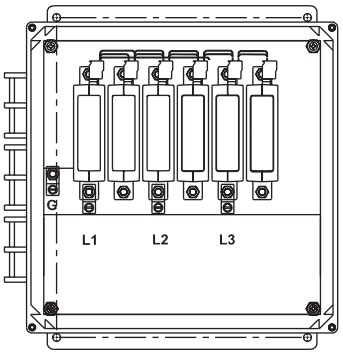
277V Models With Fused Disconnect

	INDEPENDENT UL1449 SUPPRESSED VOLTAGE RATINGS				ANSI/IEEE C 62.41 ANSI/IEEE C 62.45 LET-THROUGH VOLTAGE			
PRODUCT SERIES	**L-N**	**L-G**	**L-L**	**N-G**	**B1**	**B2**	**B3**	**C3**
ZONEMASTER 450 w/FILTER	700V	700V	1500V	400V	653V	693V	733V	916V
ZONEMASTER 450 w/o FILTER	800V	800V	1500V	400V				

The ZoneMaster 450 surge performance figures include the fused disconnect. The surge protection performance of competitive products significantly deteriorate when the “disconnect” option is chosen.

ZoneMaster 300

The ZoneMaster 300 Series is engineered to withstand the most severe transient environment at large service entrance or distribution panels, and provide decades of uninterrupted surge protection. Dual protection circuits provide redundancy ensuring the site is always protected. The ZoneMaster 300 provides the lowest suppression voltages available, 150kA surge capacity per mode, as well as full protection in all modes (L-N, L-G, L-L, and N-G).



ZoneMaster 300 Options

- **Remote monitoring unit.**
- **EMI/RFI noise filter.** Noise attenuation -75dB maximum 100 kHz to 100 MHz.
- **Multi-mode surge counter.** Requires selection of internal or fused disconnect option.
- **Internal or fused disconnect.**

See page 15 for complete specifications on options.

Mechanical Specifications:

Enclosure:	Durable, lightweight, corrosion resistant high impact plastic. Ultraviolet stabilized UL94-5V rated. NEMA 1, 2, 3, 3S, 4, 4X 12, and 13. Transparent cover for maximum visibility and safety.
Dimensions:	12" x 12" x 6" (31cm x 31cm x 15.5cm).
Weight:	Approx. 12 lbs. (5.5 kg)
Operating Environment:	-40°C to 85°C, 95% relative humidity (non-condensing)
Construction:	Low impedance assembly. Modules are bolted (1/4" bolts) to a large surge return plate to minimize transient impedance and suppression voltage.
Terminal Lugs:	#2 AWG max wire size
Mounting:	4" x 0.31" diameter holes 12 3/4" x 10" [30.5cm x 25.4cm]. Enclosure can be easily drilled for conduit/cable access.
Module Replacement:	Power should be disconnected prior to module replacement. Remove two 1/4" nuts, unplug remote indication connector and remove module. Estimated replacement time 2 minutes.
Module Dimensions:	1 1/4" x 5 5/16" x 2 1/2" [3.2cm x 13.5cm x 6.4cm]

Mechanical Specifications (with Disconnect):

Dimensions:	16" x 14" x 7" (41cm x 36cm x 18cm).
Weight:	Approx. 20 lbs. (9 kg)
Construction:	Ultra low impedance assembly. Modules are bolted to a corrosion resistant, tin plated copper bus bar. No plug-in modules in the surge path.
Mounting:	0.31" (8mm) diameter holes 16 3/4" x 12" [43cm x 30cm]. Enclosure can be easily drilled for conduit/cable access.

Electrical Specifications

300 SERIES SERVICE VOLTAGE	SUPPRESSION VOLTAGE LEVELS (UL1449)		ANSI/IEEE C62.41-1992* (1.2/50µs – 8/20µs)		MAXIMUM SURGE CURRENT PER PHASE
	L-N	L-G	CAT B3:3KA	CAT C3:10KA	
120/240V Single Ø 3 Wire 150kA	400V	400V	350V	446V	300,000A
120/208V 3Ø 4 Wire WYE 150kA	400V	400V	350V	446V	300,000A
277/480V 3Ø 4 Wire WYE 150kA	800V	800V	760V	886V	300,000A

Electrical Specifications With Fused Disconnect

	MAXIMUM SURGE CURRENT FOR EACH PROTECTION MODE				MAXIMUM SURGE CURRENT PER PHASE
	L-N	L-G	L-L	N-G	
ZONEMASTER 300	150,000A	150,000A	300,000A	75,000A	300,000A

** Testing per ANSI/IEEE C62.45*

Electrical Specifications:

Maximum Surge Current Capacity Per Mode: L-G 150,000A (8/20µs), L-N 150,000A (8/20µs), L-L 150,000A (8/20µs), N-G 150,000A (8/20µs)

Maximum Continuous Operating Voltage: 25% above nominal

Remote Indication Contacts: NO/NC, 125VAC, 2A rated

Module Diagnostics: Protection present – Green LED. Fault warning – Mechanical flag (fuse link operated). High voltage neutral to ground – Red LED.

Protection Technology: Patented large block, three terminal MOVs.

Module Protection: Dual thermal and short circuit fusing mechanisms; UL94-5V rated plastic enclosure.

Optional Internal or Fused Disconnect: 600VAC, 200,000 RMS Symmetrical Rating. Fused disconnect features 200,000 AIC fusing.

Redundant Protection Stages in all Modes: Each module contains dual independent redundant protection circuits.

NOTE: *Surge current capacities are the results of independent testing on complete units, including all fusing mechanisms.*

Independently Tested High Current Suppressed Voltage Levels

	50kA 8/20	100kA 8/20	150kA 8/20
120V Versions	673V	956V	1300V
277V Versions	1140V	1490V	1790V

Duty Cycle Performance (Surge Life)

	MAXIMUM SURGE CURRENT PER MODE	REPETITIVE SURGE CURRENT (>4 IMPULSES PER MODE	MAXIMUM NUMBER OF CURRENT IMPULSES AT 10,000 (8/20)	LONG DURATION SURGE CURRENT (10/1,000µs)
ZONEMASTER 300	150,000A	100,000A	2,500A	2,900A

120V Models With Fused Disconnect

	INDEPENDENT UL1449 SUPPRESSED VOLTAGE RATINGS				ANSI/IEEE C 62.41 ANSI/IEEE C 62.45 LET-THROUGH VOLTAGE			
PRODUCT SERIES	L-N	L-G	L-L	N-G	B1	B2	B3	C3
ZONEMASTER 300 w/FILTER	330V	330V	700V	400V	307V	340V	373V	533V
ZONEMASTER 300 w/o FILTER	400V	400V	800V	400V				

277V Models With Fused Disconnect

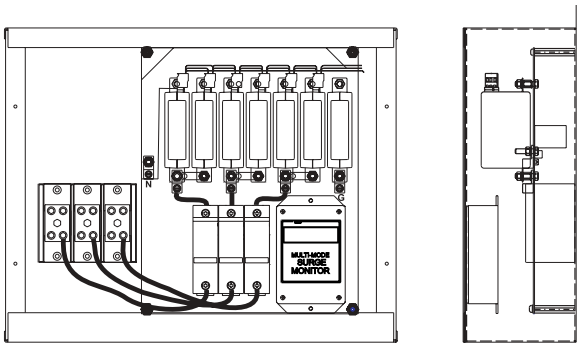
	INDEPENDENT UL1449 SUPPRESSED VOLTAGE RATINGS				ANSI/IEEE C 62.41 ANSI/IEEE C 62.45 LET-THROUGH VOLTAGE			
PRODUCT SERIES	L-N	L-G	L-L	N-G	B1	B2	B3	C3
ZONEMASTER 300 w/FILTER	700V	700V	1500V	400V	653V	706V	740V	950V
ZONEMASTER 300 w/o FILTER	800V	800V	1500V	400V				

The ZoneMaster 300 surge performance figures include the fused disconnect. The surge protection performance of competitive products significantly deteriorate when the “disconnect” option is chosen.

ZoneMaster 300 PE

The ZoneMaster 300 PE (Panelboard Extension) Series is designed for those applications where there may not be room on the side of a panelboard for an external surge protector. These units are designed to easily retrofit onto all of the major brands of branch panels.

Can be used as panel extension (left above) or as standalone unit with metal enclosure (right above).



ZoneMaster 300 PE Options

- **EMI/RFI noise filter.** Noise attenuation -75dB maximum 100 kHz to 100 MHz.
- **Standard on-board monitoring: Multi-mode surge counter, audible alarm.**
- **Remote monitoring unit.**
- **Internal or fused disconnect.**
- **Flush mount cover.**

See page 15 for complete specifications on options.

Mechanical Specifications:

Enclosure:	Durable, 16-gauge, corrosion resistant painted metal. UL67 recognized. Surface or flush mount covers.
Dimensions:	20" x 16" x 5 3/4" (51cm x 41cm x 15 cm).
Weight:	Approx. 25 lbs. (55 kg)
Operating Environment:	-40°C to 85°C, 95% relative humidity (non-condensing)
Construction:	Low impedance assembly. Modules are bolted (1/4" bolts) to a large surge return plate to minimize transient impedance and suppression voltage.
Terminal Lugs:	#2 AWG max wire size
Mounting:	Brackets provided to mount to panelboard.
Module Replacement:	Power should be disconnected prior to module replacement. Remove two 1/4" nuts, unplug remote indication connector and remove module. Estimated replacement time 2 minutes.
Module Dimensions:	1 1/4" x 5 5/16" x 2 1/2" [3.2cm x 13.5cm x 6.4cm]

Electrical Specifications

300 PE SERIES SERVICE VOLTAGE	SUPPRESSION VOLTAGE LEVELS (UL1449)	ANSI/IEEE C62.41-1992* (1.2/50µs – 8/20µs) CAT B3: 3KA	ANSI/IEEE C62.41-1992* (1.2/50µs – 8/20µs) CAT C3: 10KA	MAXIMUM SURGE CURRENT PER PHASE
120/240V Single Ø 3 Wire 150kA	400V	350V	446V	300,000A
120/208V 3Ø 4 Wire WYE 150kA	400V	350V	446V	300,000A
277/480V 3Ø 4 Wire WYE 150kA	800V	760V	886V	300,000A

** Testing per ANSI/IEEE C62.45*

Electrical Specifications:

Maximum Surge Current Capacity Per Mode: L-G 150,000A (8/20µs), L-N 150,000A (8/20µs), L-L 150,000A (8/20µs), N-G 150,000A (8/20µs)

EMI/RMI Noise Attenuation: -75dB Maximum 100 kHz to 100MHz

Maximum Continuous Operating Voltage: 25% above nominal

Remote Indication Contacts: NO/NC, 125VAC, 2A rated

Module Diagnostics: Protection present – Green LED. Fault warning – Mechanical flag (fuse link operated). High voltage neutral to ground – Red LED.

Protection Technology: Patented large block, three terminal MOVs.

Module Protection: Patented dual thermal and short circuit fusing mechanisms; UL94-5V rated plastic enclosure.

Optional or Internal Fused Disconnect: 600VAC, 200,000 RMS Symmetrical Rating. Fused disconnect features 200,000 AIC fusing.

Redundant Protection Stages in all Modes: Each module contains dual independent redundant protection circuits.

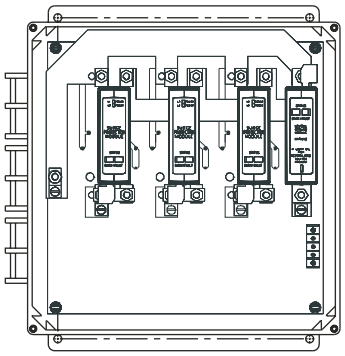
NOTE: *Surge current capacities are the results of independent testing on complete units, including all fusing mechanisms.*

Independently Tested High Current Suppressed Voltage Levels

	50KA 8/20	100KA 8/20	150KA 8/20
120V Versions	673V	956V	1300V
277V Versions	1140V	1490V	1790V

ZoneMaster 180

The ZoneMaster 180 Series is engineered to withstand the most severe transient environment at large service entrance or distribution panels, and provide decades of uninterrupted surge protection. Dual protection circuits provide redundancy ensuring the site is always protected. The ZoneMaster 180 Series provides the lowest suppression voltages available, 90kA surge capacity per mode, as well as, full protection in all modes (L-N, L-G, L-L, and N-G).



ZoneMaster 180 Options

- **Remote monitoring unit.**
- **EMI/RFI noise filter.** Noise attenuation -75dB maximum 100 kHz to 100 MHz.

See page 15 for complete specifications on options.

Mechanical Specifications:

Enclosure: Durable, lightweight, corrosion resistant high impact plastic. Ultraviolet stabilized UL94-5V rated. NEMA 1, 2, 3, 3S, 4, 4X 12, and 13. Transparent cover for maximum visibility and safety.

Dimensions: 12" x 12" x 6" (31cm x 31cm x 15.5cm).

Weight: Approx. 12 lbs. (5.5 kg)

Operating Environment: -40°C to 85°C, 95% relative humidity (non-condensing)

Construction: Low impedance assembly. Modules are bolted (1/4" bolts) to a large surge return plate to minimize transient impedance and suppression voltage.

Terminal Lugs: #2 AWG max wire size

Mounting: 4" x 0.31" diameter holes 12 3/4" x 10" [30.5cm x 25.4cm]. Enclosure can be easily drilled for conduit/cable access.

Module Replacement: Remove two 1/4" nuts, unplug remote indication connector and remove module. Estimated replacement time 2 minutes.

Module Dimensions: 1 1/4" x 5 5/16" x 2 1/2" [3.2cm x 13.5cm x 6.4cm]

Electrical Specifications

180 SERIES SERVICE VOLTAGE	SUPPRESSION VOLTAGE LEVELS (UL1449) L-N	L-G	ANSI/IEEE C62.41-1992* (1.2/50µs – 8/20µs) CAT B3:3KA	CAT C3:10KA	MAXIMUM SURGE CURRENT PER PHASE
120/240V Single Ø 3 Wire 90kA	400V	400V	395V	533V	180,000A
120/208V 3Ø 4 Wire WYE 90kA	400V	400V	395V	533V	180,000A
277/480V 3Ø 4 Wire WYE 90kA	800V	800V	875V	1030V	180,000A

** Testing per ANSI/IEEE C62.45*

Electrical Specifications:

Maximum Surge Current Capacity Per Mode: L-G 90,000A (8/20µs), L-N 90,000A (8/20µs), L-L 90,000A (8/20µs), N-G 150,000A (8/20µs)

Optional EMI/RFI Noise Attenuation: -75dB Maximum 100 kHz to 100 MHz

Maximum Continuous Operating Voltage: 25% above nominal

Remote Indication Contacts: NO/NC, 125VAC, 2A rated

Module Diagnostics: Protection present – Green LED. Fault warning – Mechanical flag (fuse link operated). High voltage neutral to ground – Red LED.

Protection Technology: Patented large block, three terminal MOVs.

Module Protection: Patented dual thermal and short circuit fusing mechanisms; UL94-5V rated plastic enclosure.

Redundant Protection Stages In All Modes: Each module contains dual independent redundant protection circuits.

NOTE:*Surge current capacities are the results of independent testing on complete units, including all fusing mechanisms.*

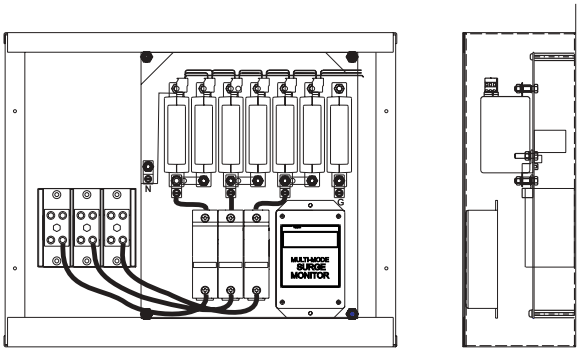
Independently Tested High Current Suppressed Voltage Levels

	45KA 8/20	90KA 8/20
120V Versions	808V	1210V
277V Versions	1240V	1750V

ZoneMaster 180 PE

The ZoneMaster 180 PE (Panelboard Extension) Series is designed for those applications where there may not be room on the side of a panelboard for an external surge protector. These units are designed to easily retrofit onto all of the major brands of branch panels.

Can be used as panel extension (left above) or as standalone unit with metal enclosure (right above).



ZoneMaster 180 PE Options

- **EMI/RFI noise filter.** Noise attenuation -75dB maximum 100 kHz to 100 MHz.
- **Standard on-board monitoring: Multi-mode surge counter, audible alarm.**
- **Remote monitoring unit.**
- **Internal or fused disconnect.**
- **Flush mount cover.**

See page 15 for complete specifications on options.

Mechanical Specifications:

Enclosure: Durable, 16-gauge, corrosion resistant painted metal. UL67 recognized. Surface or flush mount covers.

Dimensions: 20" x 16" x 5 3/4" (51cm x 41cm x 15 cm).

Weight: Approx. 25 lbs. (55 kg)

Operating Environment: -40°C to 85°C, 95% relative humidity (non-condensing)

Construction: Low impedance assembly. Modules are bolted (1/4" bolts) to a large surge return plate to minimize transient impedance and suppression voltage.

Terminal Lugs: #2 AWG max wire size

Mounting: Brackets provided to mount to panelboard.

Module Replacement: Power should be disconnected prior to module replacement. Remove two 1/4" nuts, unplug remote indication connector and remove module. Estimated replacement time 2 minutes.

Module Dimensions: 1 1/4" x 5 5/16" x 2 1/2" [3.2cm x 13.5cm x 6.4cm]

Electrical Specifications

180 PE SERIES SERVICE VOLTAGE	SUPPRESSION VOLTAGE LEVELS (UL1449)	ANSI/IEEE C62.41-1992* (1.2/50µs – 8/20µs) CAT B3: 3KA	ANSI/IEEE C62.41-1992* (1.2/50µs – 8/20µs) CAT C3: 10KA	MAXIMUM SURGE CURRENT PER PHASE
120/240V Single Ø 3 Wire 90kA	400V	395V	533V	180,000A
120/208V 3Ø 4 Wire WYE 90kA	400V	395V	533V	180,000A
277/480V 3Ø 4 Wire WYE 90kA	800V	875V	1030V	180,000A

** Testing per ANSI/IEEE C62.45*

Electrical Specifications:

Maximum Surge Current Capacity Per Mode:	L-G 90,000A (8/20µs), L-N 90,000A (8/20µs), L-L 90,000A (8/20µs), N-G 150,000A (8/20µs)
EMI/RMI Noise Attenuation:	-75dB Maximum 100 kHz to 100 MHz
Maximum Continuous Operating Voltage:	25% above nominal
Remote Indication Contacts:	NO/NC, 125VAC, 2A rated
Module Diagnostics:	Protection present – Green LED. Fault warning – Mechanical flag (fuse link operated). High voltage neutral to ground – Red LED.
Protection Technology:	Patented large block, three terminal MOVs.
Module Protection:	Patented dual thermal and short circuit fusing mechanisms; UL94-5V rated plastic enclosure.
Optional Internal or Fused Disconnect:	600VAC, 200,000 RMS Symmetrical Rating. Fused disconnect features 200,000 AIC fusing.
Redundant Protection Stages in all Modes:	Each module contains dual independent redundant protection circuits.

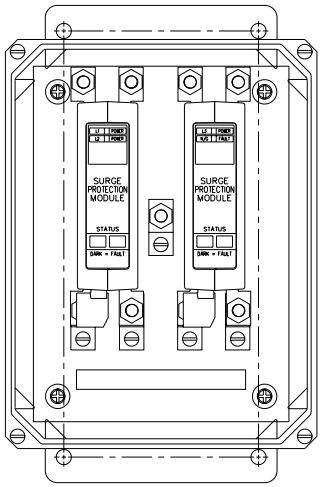
NOTE: *Surge current capacities are the results of independent testing on complete units, including all fusing mechanisms.*

Independently Tested High Current Suppressed Voltage Levels

	45KA 8/20	90KA 8/20
120V Versions	808V	1210V
277V Versions	1240V	1750V

ZoneSentinel 90

Engineered specifically for application at distribution boards and small service entrance locations. Zone Sentinel provides cost effective, high capacity surge protection. When used at a local panel, in combination with a ZoneMaster at the service entrance, ZoneSentinel provides the lowest suppression voltages available today, as well as full protection in all ten modes (L-N, L-G, L-L, and N-G).



ZoneSentinel 90 Options

- **Remote monitoring unit.**
- **EMI/RFI noise filter.** Noise attenuation -75dB maximum 100 kHz to 100 MHz.
- **Flush mount cover.**

Mechanical Specifications:

Enclosure: Durable, lightweight, corrosion resistant high impact plastic. Ultraviolet stabilized UL94-5V rated. NEMA 1, 2, 3, 3S, 4, 4X 12, and 13. Transparent cover for maximum visibility and safety.

Dimensions: 8" x 6" x 4" (20cm x 16cm x 10cm).

Weight: Approx. 4 lbs. (1.8 kg)

Operating Environment: -40°C to 85°C, 95% relative humidity (non-condensing)

Construction: Low impedance assembly. Modules are bolted (1/4" bolts) to a large surge return plate to minimize transient impedance and suppression voltage.

Terminal Lugs: #2 AWG max wire size

Mounting: 4" x 0.31" diameter holes 8 3/4" x 4" [22.2cm x 10.2cm]. Enclosure can be easily drilled for conduit/cable access.

Module Replacement: Remove four 1/4" nuts, unplug remote indication connector and remove module. Estimated replacement time 2 1/2 minutes.

Module Dimensions: 1 1/4" x 5 5/16" x 2 1/2" [3.2cm x 13.5cm x 6.4cm]

Electrical Specifications

ZONESENTINEL 90 SERVICE VOLTAGE	SUPPRESSION VOLTAGE LEVELS (UL1449)	ANSI/IEEE C62.41-1992* (1.2/50µs – 8/20µs)		
		CAT B3:3kA	U_p	CAT C3:10KA
120/240V Single Ø 3 Wire	330V	395V	0.6kV	533V
120/208V 3Ø 4 Wire WYE	330V	395V	0.6kV	533V
277/480V 3Ø 4 Wire WYE	700V	875V	1.0kV	1030V

** Testing per ANSI/IEEE C62.45; IEC 61643-1 U_{oc} = 6kV.*

Electrical Specifications:

Maximum Surge Current Capacity Per Phase: 90,000A (8/20µs)

Maximum Surge Current Capacity Per Mode: L-G 45,000A (8/20µs), L-N 45,000A (8/20µs), L-L 45,000A (8/20µs), N-G 45,000A (8/20µs)

Duty Cycle Performance (Surge Life): 45,000A (8/20µs): > 4 impulse, 10,000A (8/20µs): > 1,500 impulses, 100A (8/20µs): infinite

Maximum Continuous Operating Voltage: 25% above nominal

Remote Indication Contacts: NO/NC, 125VAC, 2A rated

Module Diagnostics: Protection present – Green LED. Fault warning – Mechanical flag (fuse link operated). High voltage neutral to ground – Red LED.

Protection Technology: Patented large block, three terminal MOVs.

Module Protection: Patented dual thermal and short circuit fusing mechanisms; UL94-5V rated plastic enclosure.

NOTE: *Surge current capacities are the results of independent testing on complete units, including all fusing mechanisms.*

Independently Tested High Current Suppressed Voltage Levels

	45kA 8/20	90kA 8/20
120V Versions	808V	1210V
277V Versions	1240V	1750V

Options

Product	Description/Specifications
Remote Monitoring Unit 	Offers clear audio/visual indication of the status of the surge suppressor unit. The RMU can be installed adjacent to the suppressor or as a remote installation. Can also be used as a standalone diagnostic device using NO/NC dry contacts. Powered locally by a plug-in transformer (included). • Unit can be ordered separately to supplement existing installations using Part No. ZHRMU **SPECIFICATIONS** **Dimensions:** 5 1/8" x 4" x 1 1/2" [13.5cm x 10.2cm x 3.8cm] **Weight:** Approx. 1 lb. **Protection Indication:** Bright green LED: Illuminated **Fault Indication:** Audible alarm. Bright red LED: Illuminated **Test Functions:** Switch tests audible alarm (checks monitoring circuitry) **Silent Function:** Switch silences audible alarm **Connections:** Accepts wires up to #14 AWG **ACCESSORY** / **DESCRIPTION** **ZHRMU250** 250' cable for Remote Monitoring Unit
Extended Range Power Filter 	Unique ultra high performance, bi-directional filter eliminates a broad range of load or line generated high frequency noise. **ELECTRICAL SPECIFICATIONS** **EMI/RFI Noise Attenuation:** -75dB Maximum 100 kHz to 100 MHz **Maximum Operating Voltage (L-N):** 400VAC Rated **Peak Let-Through Voltage (ANSI/IEEE C62.41 Cat B3 6kV Ringwave):** 200V **Agency Approval:** UL1283 Listed **Sinewave Tracking:** Controls transients at any point on the sinewave
Multi-Mode Surge Counter 	Counts the number of times a surge current is being discharged when a transient is suppressed. By monitoring surge current, not voltage, the unit gives a true indication of the actual number of times the protector has controlled a surge. **SPECIFICATIONS** **LCD Display:** Counts 0 - 99,999 **Data Storage:** 40 years without power **Count Threshold:** 100A surge current **Modes of Measurement:** Counts surge currents in normal mode (L-N), or common mode (L-G, N-G). Counter can also be used to count surges on any one phase. **Multiple Measurement Mode:** Counts surge activity and can also be used to identify which phase has the most surges.
Internal or Fused Disconnect	600VAC, 200,000 RMS Symmetrical Rating. Fused disconnect features 200,000 AIC fusing.

ZoneMaster Replacement Modules

Product	Description/Specifications

MODULE DIMENSIONS: 1 1/4" x 5 5/16" x 2 1/2" [3.2cm x 13.5cm x 6.4cm]

MODULES FOR ZE, ZC, AND ZCM MODELS

Wiremold #	Description
ZM120LG	L-G for 120T and 120Y
ZM120LN	L-N for 120T and 120Y
ZM277LG	L-G for 277Y
ZM277LN	L-N for 277Y
ZMNG	N-G for any ZC models without D or F option, and all ZCM models.
ZMNG16147	N-G for all ZE models, and any ZC model with D or F option (all units with case size of 16" x 14" x 7" [607mm x 356mm x 178mm]). Not for use with ZCM series.

MODULES FOR ZB, ZBM, AND ZA MODELS

Wiremold #	Description
ZS120	Module for 120T and 120Y
ZS277	Module for 277Y
ZSA120TNG	N-G for ZA120T models
ZSA120YNG	N-G for ZA120Y models
ZSA277YNG	N-G for ZA277Y models
ZSBNG	N-G for all ZB and ZBM models

WIREMOLD

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ED1165R1 – Updated February 2005 – For latest specs visit www.wiremold.com