



Features:

- **UL 1449 Fourth Edition Listed**
- **130kA – 160kA Per Phase ratings (65kA-80kA per mode)**
- **All UL required OCP & Safety Coordination included inside**
 - Type 1 SPDs intended for Line or Load Side of Main Disconnect
 - Type 2 SPDs intended for Load Side of Main Disconnect
- **20kA Inominal**
- **200kA SCCR**
- **UL 96A Lightning Protection Master Label compliant**
- **Voltage Specific Design – Highly configurable**
- **All MOV suppression elements monitored**
- **All Modes of Protection**
- **10 Year Warranty (longer optional)**

Performance Specifications

Surge Capacities	L-N	L-G	N-G
130kA Per Phase (65kA Per Mode)	65kA	65kA	65kA
160kA Per Phase (80kA Per Mode)	80kA	80kA	80kA
UL 1449 Fourth Edition Listed Type 1 and Type 2			
UL 1449 Fourth Edition tested Inominal (I_n): 20kA			
UL 1449 Fourth Edition tested SCCR: 200kA			
UL 1449 Fourth Edition Voltage Protection Ratings (VPRs):			
– 208Y/120V: as low as 600V			
– 480Y/277V: as low as 1000V (data table on back)			
EMI/RFI Filtering Noise Rejection:			
– 60dB Maximum – UL 1449 Type 2 SPD (UL 1283)			
– 25dB Maximum – UL 1449 Type 1 SPD			
Less than 1 nanosecond response time			

Third Party Testing

- Single Impulse Tested - Third Party Verified** (former NEMA LS-1 style) To Each Mode's Rating Up To Surge Generator Limit Of 200kA
- Life Cycle Surge Testing (Repetitive Impulse Testing):
- 8,000 IEEE C High 20kV, 10kA impulses Per Mode
 - 16,000 IEEE C High 20kV, 10kA impulses Per Phase

Physical Specifications

Relative Humidity Range: 0 – 95% non-condensing
Operating Frequency: 47-63Hz
Maximum Operating Temperature: 60 °C (140 ° F)
Weight : 6.5lb (3kg)
Standard NEMA 4X Enclosure UL94-5VA
Standard NEMA 4X Flexible Conduit Included
Available Flush Mount Plate Accessory: "5104XFMKIT"
Standard Size: 7.88" x 4.13" x 4.75" (200mm x 104.9mm x 120.7mm)
Lug size: #10 - #14 AWG
Typical connection: #10 AWG and 30A circuit breaker

Design Attributes

- Designed, Manufactured & Tested consistent with:
- ANSI/IEEE C62.411-2002, C62.412-2002, C62.45-2002, C62.62-2010, C62.72-2016, IEEE SA 1100-2005 (Emerald Book)
 - NEC[®] Article 285
 - NEC[®] Articles 620.51(E), 645.18, 670.6, 695.15, 700.8 & 708 requiring SPDs
 - UL 96A and NFPA 780 Lightning Protection

High Energy Parallel Design for Category C High applications

For external Mounting on Electrical Distribution Equipment, Switchgear, Switchboards, Motor Control Centers, Panelboards, Transfer Switches, etc.

Individually Fused & Thermally Protected MOVs

Robust Phenolic Coated MOV Construction

Solid State Bidirectional Operation

Diagnostic Monitoring

- 100% monitoring – Every MOV is monitored, including N-G
- Green LED Status indicator
- Red LED service indicator
- Audible Alarm with Enable/Disable Function
- Form C Dry Contacts 250V, 5A

Quality, Standards & Validation

- Type 1 UL 1449 Fourth Edition
- Type 2 (Opt.) UL 1449 Fourth Edition, UL 1283, cUL for Canada
- UL file: VZCA.E324279
- 10 Year Warranty (longer optional)
- Burn-in tested prior to shipment
- ISO 9001:2008 Quality Management System
- ISO 17025:2005 Laboratory Qualification

Model 510 Number Configurator & Options

510

Model 510
Product Line



Voltage Codes

P

Per Phase
kA Rating
System



kA Rating
Per Phase

A

Modes of
Protection

A = All Standard
Modes for
that Voltage
Code (Default)

Delete Mode
Options & Alt.
Configurations:
Contact Factory



Connection
Type

A

Monitoring
Options

A = LEDs, Audible
Alarm, Dry
Contact Relay
(Default)

J

Enclosure

J = NEMA 4X Non-Metallic
(Default)
For metallic enclosure,
see Model 520

UL 1449

Type1/Type 2

1 = Type 1
2 = Type 2
(Includes UL
1283 Filter and
cUL Marking
for Canada)

Post Part Number

Accessory/Option(s)

0 = No Trailing
Accessory/Option
X = Yes, Trailing
Accessory/Option

Common Systems

- 120S = 240/120V Split Phase - 1Ø, 3W+Grnd, (Fig 1)
- 120Y = 208Y/120V Wye - 3Ø 4W+Grnd, (Fig 2)
- 240H = 240/120V High Leg Delta (B High), (Fig 3)
- 277Y = 480Y/277V Wye - 3Ø 4W+Grnd, (Fig 2)
- 480D = 480V Delta - 3Ø 3W+Grnd, (Fig 4) & HRG Wye

Other Available Systems - Confirmation Encouraged

- 120N = 120V Single Phase (Fig 5)
- 127N = 127V Single Phase (Fig 5)
- 127S = 254/127V Split Phase - 1Ø, 3W+Grnd, (Fig 1)
- 127Y = 220Y/127V Wye - 3Ø, 4W+Grnd (Fig 2)
- 208D = 208V Delta - 3Ø, 3W+Grnd (Fig 4)
- 220N = 220V Single Phase (Fig 5)
- 220S = 440/220V Split Phase - 1Ø, 3W+Grnd, (Fig 1)
- 220Y = 380Y/220V Wye - 3Ø 4W+Grnd (Fig 2)
- 230Y = 400Y/230V Wye - 3Ø 4W+Grnd (Fig 2)
- 230N = 230V Single Phase (Fig 5)
- 240N = 240V Single Phase (Fig 5) - Not split phase
- 240Y = 415Y/240V Wye - 3Ø 4W+Grnd (Fig 2)
- 240C = 240V B Corner Grnd Delta, 3Ø 3W+Grnd (Fig 6)
- 240D = 240V Delta - 3Ø 3W+Grnd (Fig 4)
- 254N = 254V Single Phase (Fig 5)
- 254Y = 440Y/250V Wye - 3Ø 4W+Grnd (Fig 2)
- 277N = 277V Single Phase (Fig 5)
- 277S = 480/240V Split Phase, or Two legs of Wye, (Call)
- 400D = 400V Delta - 3Ø, 3W+Grnd (Fig 4)
- 415D = 415V Delta - 3Ø, 3W+Grnd (Fig 4)
- 480C = 480V B Corner Grnd Delta - 3Ø 3W+Grnd (Fig 6)
- 480H = 480/240V High Leg Delta (B High), (Fig 3)

C = Compression
Lugs (Default)

W = Wire Leads
10 AWG

13 = 130kA Per Phase
(65kA Per Mode)

16 = 160kA Per Phase
(80kA Per Mode)

**Available Accessories
(Order Separately)**
5104XFMKIT -
Flush Mount Kit

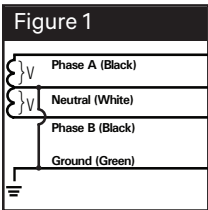
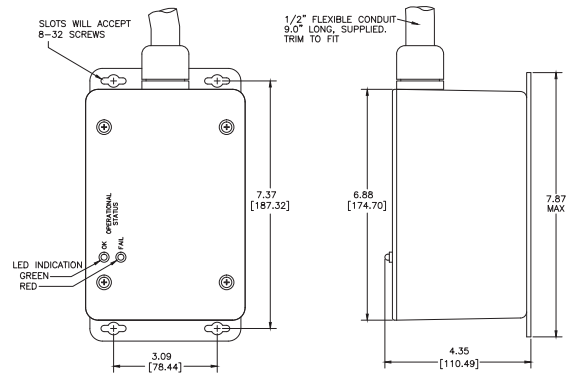


Figure 1
SPLIT
2 Phases, 1 Neutral,
1 Ground

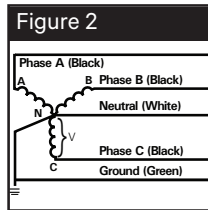


Figure 2
WYE
3 Phases, 1 Neutral,
1 Ground

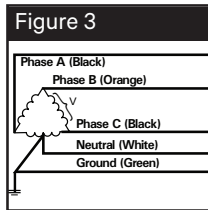


Figure 3
HIGH LEG DELTA
(B High) 3 Phases,
(B High), 1 Neutral,
1 Ground

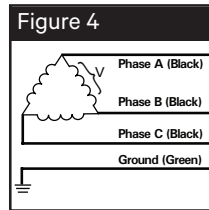


Figure 4
DELTA & HRG WYE
3 Phases, 1 Ground

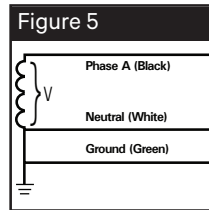


Figure 5
SINGLE POLE
1 Phase, 1 Neutral,
1 Ground

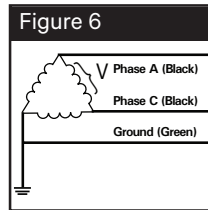


Figure 6
CORNER GROUND
DELTA (B grounded)
2 Phases, 1 Ground

Performance Data

Common Power Systems		UL 1449 Fourth Edition Test Data						
		Voltage Protection Ratings (VPR - 3kA)				I _n	SCCR	MCOV
		L-N	L-G	N-G	L-L			
120S	= 240/120V Split Phase	600V	700V	600V	900V	20kA	200kA	150
120Y	= 208Y/120V 3Ø Wye	600V	700V	600V	900V	20kA	200kA	150
220Y	= 380Y/220V 3Ø Wye	1000V	1000V	900V	1800V	20kA	200kA	320
240H	= 240/120V B High Leg Delta	600/1000V	700/1000V	600V	900/1600V	20kA	200kA	150 / 320
277Y	= 480Y/277V 3Ø Wye	1000V	1000V	900V	1800V	20kA	200kA	320
480D	= 480V 3Ø Delta	-	1800V	-	3000V	20kA	200kA	552