



### Features:

- **UL 1449 Third Edition Listed (Sept 2009)**
- **100kA – 500kA per phase ratings**
- **Type 1 SPD –**
  - All UL required OCP & Safety Coordination included inside
  - Can be installed line-side or load-side of main disconnect
- **20kA Inominal (most models)**
- **200kA SCCRs (most models)**
- **UL 96A Lightning Protection Master Label compliant (@20kA In)**
- **Voltage Specific Design – Highly configurable**
- **All MOV suppression elements monitored**
- **Optional Rotary Disconnect Switch**

### Performance Specifications

- | Surge Capacities   | L-N   | L-G   | N-G   |
|--------------------|-------|-------|-------|
| <b>100kA/phase</b> | 50kA  | 50kA  | 50kA  |
| <b>150kA/phase</b> | 100kA | 50kA  | 50kA  |
| <b>200kA/phase</b> | 100kA | 100kA | 100kA |
| <b>250kA/phase</b> | 150kA | 100kA | 100kA |
| <b>300kA/phase</b> | 150kA | 150kA | 150kA |
| <b>400kA/phase</b> | 200kA | 200kA | 200kA |
| <b>500kA/phase</b> | 250kA | 250kA | 250kA |
- UL 1449 Third Edition Listed, cUL, UL 1283 R/C
  - UL 1449-3 Type 1 SPD (cUL Type 2 optional)
  - UL 1449-3 tested Inominal: 20kA & 10kA
  - UL 1449-3 tested SCCR: 200kA & 100kA
  - UL 1449-3 Voltage Protection Ratings (VPRs):
    - 208Y/120V: as low as 600V
    - 480Y/277V: as low as 1000V
  - Less than 1 nanosecond response time
  - Repetitive Impulse: 5,000 hits
  - AC Sinewave Tracking Filter with EMI/RFI Filtering up to -50dB from 10kHz to 100MHz

### Diagnostic Monitoring

- 100% monitoring – Every MOV is monitored, incl. N-G
- Green LED Status indicator per phase
- Red LED service indicator
- Audible Alarm with Silence Switch
- Test Function: toggles red service LED, audible alarm & dry contact (if equipped)
- N-G overvoltage detection
- Phase Loss monitoring (toggles LED & dry contacts)
- Electrically isolated circuitry ensures surges do not damage diagnostics
- Form C Dry Contacts, 240V, 5A (two sets)
- Optional Surge Counter, six-digit LCD, with test function, reset & no-maintenance Eprom memory

### Design Features

- Designed, Manufactured & Tested consistent with:
  - ANSI/IEEE C62.41.1-2002, C62.41.2-2002, and C62.45-2002
  - NEMA LS-1
  - NEC Article 285
  - IEC 61643
- High Energy Parallel Design for Category C3 & C-High applications
- For External Mounting next to Switchgear, Motor Controls Centers or Panelboards
- Individually Fused & Thermally Protected MOVs
- Large-Block, 34mm square, 50kA MOVs
- Replaceable Module Construction
- Solid State Bidirectional Operation

### Physical Specifications

- Relative Humidity Range: 0 -95% non-condensing
- Operating Frequency: 47-63Hz
- Operating Temperature: -25°C (-15°F) to +60°C (140°F)
- Weight: 24 lbs (11 kg)
- Standard NEMA 1/12/3R/4 enclosure
- Standard size: 12" x 12" x 7.5" (305mm x 305mm x 191mm)
- Lug size: #2 - #14 AWG (w/opt. disconnect: #6 - #1/0)
- Typical connection: #6 AWG and 60A breaker

### Quality, Standards & Validation

- UL 1449 Third Edition, cUL, UL 1283 R/C
- UL file: VZCA.E321351 at [www.UL.com](http://www.UL.com)
- RoHS-compliant
- IEC 61643, CE
- 10 year warranty (longer optional)
- Burn-In tested Prior to Shipment
- ISO 9001:2008 Quality Management System
- ISO 17025:2005 Laboratory Qualification
- Made in USA



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**Voltage Code for Electrical System**

- Common North American Systems:**  
**01 = 240/120V Split Phase - 1Ø 3W+Grnd (Fig 1)**  
**02 = 208Y/120V Wye - 3Ø 4W+Grnd (Fig 2)**  
**03 = 240/120V High Leg Delta (B High) (Fig 3)**  
**04 = 480Y/277V Wye - 3Ø 4W+Grnd (Fig 2)**  
**05 = 480V Delta - 3Ø 3W+Grnd (Fig 4) & HRG Wye (450kA replaces 400kA or 500kA)**  
**08 = 600Y/347V Wye - 3Ø 4W+Grnd (Fig 2)**
- Other Available Systems - Confirmation encouraged:**  
 15 = 254/127V Split Phase - 1Ø 3W+Grnd (Fig 1)  
 18 = 480/277V 2-Pole, (480/240V Split Phase) (Fig 1)  
 21 = 220Y/127V Wye - 3Ø 4W+Grnd (Fig 2)  
 41 = 520Y/300V Wye - 3Ø 4W+Grnd (Fig 2)  
 42 = 415Y/240V Wye - 3Ø 4W+Grnd (Fig 2)  
 43 = 400Y/230V Wye - 3Ø 4W+Grnd (Fig 2)  
 44 = 440Y/250V Wye - 3Ø 4W+Grnd (Fig 2)  
 51 = 480V B Corner Grnd Delta, 3Ø 3W+Grnd (Fig 6) (450kA replaces 400kA or 500kA)  
 06 = 240V Delta - 3Ø 3W+Grnd (Fig 4) (450kA replaces 400kA or 500kA)  
 61 = 240V B Corner Grnd Delta, 3Ø 3W+Grnd (Fig 6) (450kA replaces 400kA or 500kA)  
 07 = 380Y/220V Wye - 3Ø 4W+Grnd (Fig 2)  
 09 = 600V Delta - 3Ø 3W+Grnd (Fig 4) & HRG Wye (Available: 100kA, 150kA, 200kA, 250kA)  
 91 = 600V B Corner Grnd Delta, 3Ø 3W+Grnd (Fig 6) (Available: 100kA, 150kA, 200kA, 250kA)  
 11 = 120V Single Phase (Fig 5)  
 12 = 240V Single Phase (Fig 5) - Not split phase  
 13 = 127V Single Phase (Fig 5)  
 14 = 300V Single Phase (Fig 5)  
 16 = 277V Single Phase (Fig 5)  
 17 = 480V Single Phase (1 Hot, 1 Neu, 1 Grnd) (Fig 5)

**Surge Current Rating**

- 10 = 100kA/Phase**  
**15 = 150kA/Phase**  
**20 = 200kA/Phase**  
**25 = 250kA/Phase**  
**30 = 300kA/Phase**  
**40 = 400kA/Phase**  
**45 = 450kA/Phase**  
 (Voltage Codes 05, 51, 06 & 61)  
**50 = 500kA/Phase**

**Options**

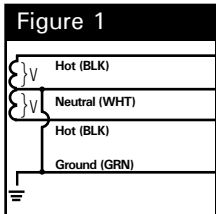
- X = Surge Counter, six-digit LCD counter includes maintenance-free Eprom memory backup  
 E = Remote Locatable Display on 4 ft Cable custom cable lengths available  
 F = Noise Filtering - Extended Range & Attenuation (available on 400kA & 500kA models)  
 D = Rotary Disconnect Switch, Bussmann, UL98  
 T = Thru-Door Rotary Disconnect Switch, Bussmann, UL98, E1 enclosure only (Consult factory for other disconnect switch options)  
 2 = Type 2 SPD Bearing cUL Mark

Delete Options - Consult Factory for Order Code  
 Delete L-N Protection (reduces kA rating)  
 Delete L-G Protection (reduces kA rating)  
 Delete N-G Protection (reduces kA rating)  
 Delete Noise Filtering

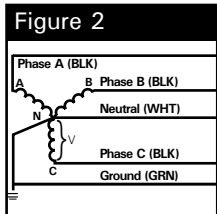
Available Accessory (order separately)  
 RM = Remote Monitor

**Enclosure Rating**

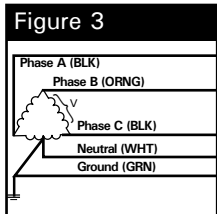
- E1 = NEMA 1/12/3R/4 (size: 12" x 12" x 7.5")**  
**4X = NEMA 4X Non-Metallic (size: 14" x 12" x 6")**  
 (polycarbonate, display inside clear front door)  
**4S = NEMA 4X Stainless Steel (size: 12" x 12" x 6")**  
 (display inside door)  
**FM = NEMA 1 Flush Mount (wall cavity size: 12" x 12" x 6" deep)**  
**P1 = NEMA 1 pullbox 'indoor' (size: 12" x 12" x 6") includes 'E' option**  
 (Optional rotary disconnect increases enclosure sizes to 16" x 14" x 6" on models > 300kA)



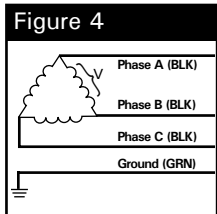
**Figure 1**  
 SPLIT  
 2 Hots, 1 Neu, 1 Grnd



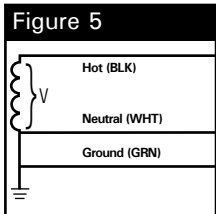
**Figure 2**  
 WYE  
 3 Hots, 1 Neu, 1 Grnd



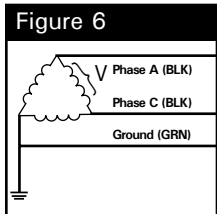
**Figure 3**  
 HI-LEG DELTA (B High)  
 3 Hots, (B HIGH),  
 1 Neu, 1 Grnd



**Figure 4**  
 DELTA & HRG WYE  
 3 Hots, 1 Grnd



**Figure 5**  
 SINGLE POLE  
 1 Hot, 1 Neu, 1 Grnd



**Figure 6**  
 CORNER GROUND  
 DELTA (B grounded)  
 2 Hots, 1 Grnd

**Performance Data**

Common North American Systems		UL 1449 THIRD Edition (Sept 2009) Test Data							
		Voltage Protection Ratings (VPR - 3kA)							
		L-N	L-G	N-G	L-L	Type	In	SCCR	MCOV
01	= 240/120V Split Phase (<300kA)	700	700	700	1200	Type 1	20kA	100kA	150
01	= 240/120V Split Phase (=>300kA)	700	600	600	1000	Type 1	20kA	100kA	150
02	= 208Y/120V 3Ø Wye (<300kA)	700	700	700	1200	Type 1	20kA	200kA	150
02	= 208Y/120V 3Ø Wye (=>300kA)	700	600	600	1000	Type 1	20kA	200kA	150
03	= 240Y/120V B High Leg Delta	700/1200	700/1200	700	1800	Type 1	20kA	200kA	150 / 320
04	= 480Y/277V 3Ø Wye (<300kA)	1200	1200	1200	2000	Type 1	20kA	200kA	320
04	= 480Y/277V 3Ø Wye (=>300kA)	1200	1000	1000	1800	Type 1	20kA	200kA	320
05	= 480V 3Ø Delta (<300kA)	-	1800	-	1800	Type 1	10kA	200kA	550
05	= 480V 3Ø Delta (=>450kA)	-	1800	-	1800	Type 1	20kA	200kA	550
08	= 600Y/347V 3Ø Wye (<300kA)	1500	1500	1500	2500	Type 1	10kA	200kA	420
08	= 600Y/347V 3Ø Wye (=>300kA)	1500	1500	1500	2500	Type 1	20kA	200kA	420

**Other Available Systems:**

Please see supplementary data sheet, contact us at info@aptvss.com, or confirm at www.UL.com using CCN of VZCA  
 Optional disconnect switch may increase VPRs

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