



### Features:

- **UL 1449 Third Edition Listed (Sept 2009)**
- **400kA – 1,000kA 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 (In)**
- **200kA SCCRs (most models)**
- **UL 96A Lightning Protection Master Label compliant**
- **Rotary Disconnect Switch included as Standard Equipment**
- **Dual Redundant Replaceable Modules**
- **Voltage Specific Design – Highly configurable**
- **All MOV suppression elements monitored**

### Performance Specifications

- | Surge Capacities    | L-N   | L-G   | N-G   |
|---------------------|-------|-------|-------|
| <b>400kA/phase</b>  | 200kA | 200kA | 200kA |
| <b>600kA/phase</b>  | 300kA | 300kA | 300kA |
| <b>800kA/phase</b>  | 400kA | 400kA | 400kA |
| <b>1000kA/phase</b> | 500kA | 500kA | 500kA |
- UL 1449 Third Edition Listed, UL 1283 and cUL
  - UL 1449-3 Type 1 SPD
  - UL 1449-3 tested Inominal (In): 20kA
  - UL 1449-3 tested SCCR: 200kA & 100kA
  - UL 1449-3 Voltage Protection Ratings (VPRs):
    - 208Y/120V: as low as 700V
    - 480Y/277V: as low as 1200V
  - 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, CE
- 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
- Dual 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: 52 lbs (23.6 kg)
- Standard NEMA 1/12/3R/4 enclosure
- Standard size: 20" x 20" x 7.5" (50.8cm x 50.8cm x 19cm)
- Lug size: #6 - #1/0 AWG
- Typical connection: #6 AWG and 60A breaker

### Quality, Standards & Validation

- UL 1449 Third Edition, cUL, UL 1283
- 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





**Voltage Code for Electrical System**      **Surge Current Rating**      **Options**

**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 (Fig4) & HRG Wye (Available: 400kA, 600kA, 900kA)**  
**08 = 600Y/347V Wye - 3Ø 4W+Grnd (Fig2)**

**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) (Available: 600kA & 900kA)  
 06 = 240V Delta - 3Ø 3W+Grnd (Fig 4) (Available: 600kA & 900kA)  
 61 = 240V B Corner Grnd Delta, 3Ø 3W+Grnd (Fig 6) (Available: 600kA & 900kA)  
 07 = 380Y/220V Wye - 3Ø 4W+Grnd (Fig 2)  
 09 = 600V Delta - 3Ø 3W+Grnd (Fig 4) & HRG Wye (Available: 400kA & 500kA)  
 91 = 600V B Corner Grnd Delta, 3Ø 3W+Grnd (Fig 6) (Available: 400kA & 500kA)  
 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)

**40 = 400kA/Phase** (Voltage Codes 09 & 91 only)  
**50 = 500kA/Phase** (Voltage Codes 09 & 91 only)  
**60 = 600kA/Phase**  
**80 = 800kA/Phase**  
**90 = 900kA/Phase** (Voltage codes 05, 51, 06, 61 only)  
**1K = 1000kA/Phase**

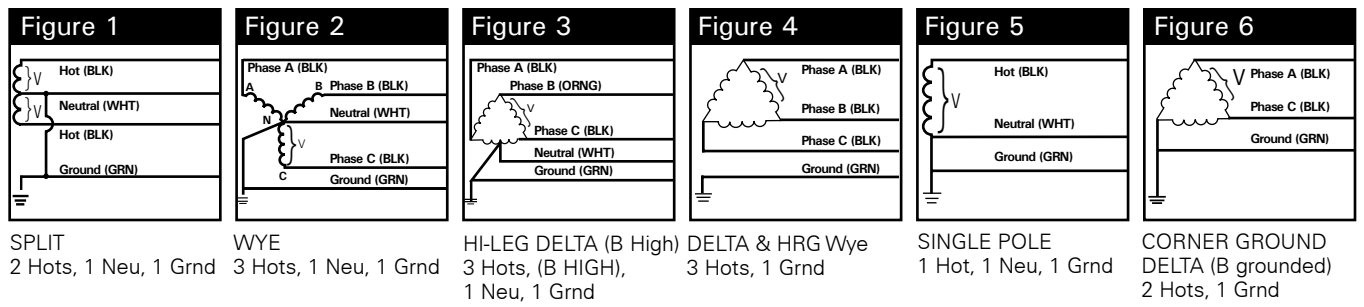
X = Surge Counter, six-digit LCD counter includes maintenance-free Eprom memory backup  
 E = Remote Locatable Display on 4 ft Cable custom cable lengths available  
 F = Noise Filtering - Extended Range & Attenuation (available on 400kA & 500kA models)  
 T = Thru-Door Rotary Disconnect Switch, Bussmann, UL98, E1 enclosure only  
 K = Rotary Disconnect Switch, Katko, UL508  
 S = Thru-Door Rotary Disconnect Switch, Katko, UL 508, E1 enclosure only

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: 20" x 20" x 7.5")**  
**4X = NEMA 4X Non-Metallic (size: 24" x 24" x 8")** (fiberglass, display inside door)  
**4S = NEMA 4X Stainless Steel (size: 20" x 20" x 7")** (display inside door)  
**P1 = NEMA 1 pullbox 'indoor' (size: 20" x 20" x 6") - includes 'E' option**  
**FM = NEMA 1 Flush Mount (wall cavity size: 20" x 20" x 6" deep)**  
 (Dimensions include standard rotary disconnect switch. Optional Thru-Door handle does not increase enclosure sizes.)



**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	700	700	700	1000	Type 1	20kA	100kA	150
02	= 208Y/120V 3Ø Wye	700	700	700	1000	Type 1	20kA	200kA	150
03	= 240/120V B High Leg Delta	700/1200	700/1200	700/1000	1000/1800	Type 1	20kA	200kA	150 / 320
04	= 480Y/277V 3Ø Wye	1200	1200	1200	1800	Type 1	20kA	200kA	320
05	= 480V 3Ø Delta	-	1800	-	1800	Type 1	20kA	200kA	550
08	= 600Y/347V 3Ø Wye	1500	1500	1500	2500	Type 1	20kA	200kA	420

**Other Available Systems:**  
 Please see supplementary data sheet, contact us at info@apptvss.com, or confirm at www.UL.com using CCN of VZCA  
 Optional disconnect switch may increase VPRs

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