



**Features:**

- **Directly Connected, Discrete Protection Elements Between All Possible Modes**
- **UL 1449 Third Edition Listed (Sept 2009)**
- **150kA – 450kA 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 (I<sub>n</sub>)**
- **200kA SCCRs (most models)**
- **UL 96A Lightning Protection Master Label compliant (@20kA I<sub>n</sub>)**
- **All MOV suppression elements monitored**

**Performance Specifications**

- **Directly Connected, Discrete Protection Elements Between All Possible Modes with True 10-Mode Protection**

Surge Capacities	L-N	L-G	L-L	N-G
150kA/phase	50kA	50kA	50kA	50kA
300kA/phase	100kA	100kA	100kA	100kA
450kA/phase	150kA	150kA	150kA	150kA

- 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 (I<sub>n</sub>): 20kA
- 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 True 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
- Electrically isolated diagnostic circuitry
- 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
- 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" (30.5cm x 30.5cm x 19cm)
- 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
- 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



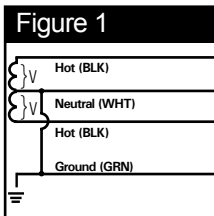
TE    XAL         ...

**Voltage Code for Electrical System**

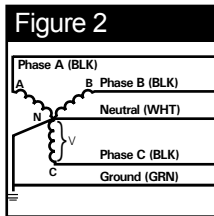
- Common North American Systems:**  
**01 = 240/120V Split Phase - 1Ø 3W+Grnd (Fig 1)**  
**02 = 208Y/120V Wye - 3Ø 4W+Grnd (Fig 2)**  
**03 = 240/120V High Leg Delta (B High) (Fig 3)**  
**04 = 480Y/277V Wye - 3Ø 4W+Grnd (Fig 2)**

**Other Available Systems - Confirmation encouraged:**

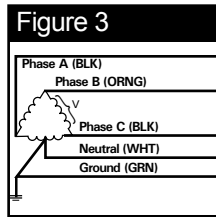
- 15 = 254/127V Split Phase - 1Ø 3W+Grnd (Fig 1)  
 18 = 480/277V 2-Pole, (480/240V Split Phase) (Fig 1)  
 21 = 220Y/127V Wye - 3Ø 4W+Grnd (Fig 2)  
 42 = 415Y/240V Wye - 3Ø 4W+Grnd (Fig 2)  
 43 = 400Y/230V Wye - 3Ø 4W+Grnd (Fig 2)  
 44 = 440Y/250V Wye - 3Ø 4W+Grnd (Fig 2)  
 07 = 380Y/220V Wye - 3Ø 4W+Grnd (Fig 2)



**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

**Surge Current Rating**

- 15 = 150kA/Phase**  
**30 = 300kA/Phase**  
**45 = 450kA/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, Bussmann, UL98
- T = Thru-door Rotary Disconnect Switch, Katko, UL 508, 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 450kA only)

**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	= 240Y/120V B High Leg Delta	800/1500	700/1200	700	1800	Type 1	20kA	200kA	150 / 320
04	= 480Y/277V 3Ø Wye	1200	1200	1200	1800	Type 1	20kA	200kA	320
<b>Other Available Systems - Confirmation encouraged:</b>									
15	= 254/127V Split Phase	700	700	700	1000	Type 1	20kA	200kA	150
21	= 220Y/127V 3Ø Wye	700	700	700	1000	Type 1	20kA	200kA	180
42	= 415Y/240V 3Ø Wye	1200	1200	1200	1800	Type 1	20kA	200kA	320
43	= 400Y/230V 3Ø Wye	1200	1200	1200	1800	Type 1	20kA	200kA	320
44	= 440Y/250V 3Ø Wye	1200	1200	1200	1800	Type 1	20kA	200kA	320
07	= 380Y/220V 3Ø Wye	1200	1200	1200	1800	Type 1	20kA	200kA	320

**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

Advanced Protection Technologies  
 14550 58th Street North · Clearwater, Florida 33760  
 (800) 237-4567 · (727) 535-6339 · Fax (727) 539-8955  
 www.aptvss.com · info@aptvss.com

