



Features:

- **Directly Connected, Discrete Protection Elements Between All Possible Modes**
- **UL 1449 Third Edition Listed (Sept 2009)**
- **600 & 900kA 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_n)**
- **200kA SCCRs (most models)**
- **UL 96A Lightning Protection Master Label compliant**
- **Rotary Disconnect Switch included as Standard Equipment**
- **Dual Redundant Replaceable Module Construction**
- **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
600kA/phase	200kA	200kA	200kA	200kA
900kA/phase	300kA	300kA	300kA	300kA

- UL 1449 Third Edition Listed, UL 1283 and cUL
- UL 1449-3 Type 1 SPD
- UL 1449-3 tested Inominal (I_n): 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 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
- Dual Redundant 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
- 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





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:
 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)
 07 = 380Y/220V Wye - 3Ø 4W+Grnd (Fig 2)

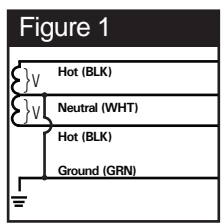


Figure 1
 SPLIT
 2 Hots, 1 Neu, 1 Grnd

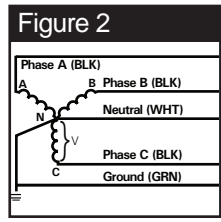


Figure 2
 WYE
 3 Hots, 1 Neu, 1 Grnd

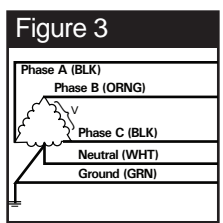


Figure 3
 HI-LEG DELTA (B High)
 3 Hots, (B HIGH),
 1 Neu, 1 Grnd

Surge Current Rating

60 = 600kA/Phase
90 = 900kA/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)
- T = Thru-Door Rotary Disconnect Switch, Bussmann, UL98, E1 enclosure only
- K = Rotary Disconnect Switch, Katko, UL 508
- 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 7.5")**
 (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	I _n	SCCR	MCOV
01 = 240/120V Wye	700	700	700	1200	Type 1	20kA	100kA	150
02 = 208Y/120V 3Ø Wye	700	700	700	1200	Type 1	20kA	200kA	150
03 = 240Y/120V B High Leg Delta	700/1200	700/1200	700	1200/1800	Type 1	20kA	200kA	150 / 320
04 = 480Y/277V 3Ø Wye	1200	1200	1200	1800	Type 1	20kA	200kA	320
Less Common & Specialty								
42 = 415V/240V 3Ø Wye	1200	1200	1200	1800	Type 1	20kA	200kA	320
43 = 400V/230V 3Ø Wye	1200	1200	1200	1800	Type 1	20kA	200kA	320
44 = 440V/250V 3Ø Wye	1200	1200	1200	1800	Type 1	20kA	200kA	320
07 = 380V/220V 3Ø Wye	1200	1200	1200	1800	Type 1	20kA	200kA	320

Other Available Systems:
 Please see supplementary data sheet, contact us at info@aptsurge.com or confirm at www.UL.com using CCN of VZCA.

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