



DS Series

Type 1/Type 2 Surge Protective Device/SPD



Features:

- **UL 1449 Fourth Edition Listed**
- **100kA – 200kA per phase ratings**
- **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 (I_n) (most models)**
- **200kA SCCRs (most models)**
- **UL 96A Lightning Protection Master Label compliant (@20kA I_n)**
- **Voltage Specific Design – Highly configurable**
- **All MOV suppression elements monitored**
- **All Modes of Protection**

Performance Specifications

Surge Capacities	L-N	L-G	N-G	L-L
100kA Per Phase	50kA	50kA	50kA	100kA
150kA Per Phase	100kA	50kA	50kA	150kA
200kA Per Phase	100kA	100kA	100kA	200kA

- UL 1449 Fourth Edition Listed Type 1, CSA 22.2 No. 269.1
- Optional UL 1449-4 Type 2 SPD, UL 1283 Listed, CSA 22.2 No. 269.2
- UL 1449-4 tested Inominal (I_n): 20kA & 10kA
- UL 1449-4 tested SCCR: 200kA & 100kA
- UL 1449-4 Voltage Protection Ratings (VPRs):
 - 208Y/120V: as low as 600V
 - 480Y/277V: as low as 1000V (data table on back)
- 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 (Type 2 option only, incl. UL 1283 Listing)

Physical Specifications

- Relative Humidity Range: 0 - 95% non-condensing
- Operating Frequency: 47 - 63Hz
- Peak Operating Temperature: +85°C (185°F)
- Operating Temperature: -25°C (-15°F) to +60°C (140°F)
- Weight: 5 lbs (2.3 kg)
- NEMA 4X Polycarbonate enclosure – UL 746C(f1) & UL 94-5VA
- Dimensions: 6" x 6" x 4" (152mm x 152mm x 102mm) (excluding removable mounting feet)
- Lug size: #8 - #10 AWG
- Pre-wired with 3' (1m) of #10 AWG conductor
- Typical connection: 30A breaker

Design Features

- Designed, Manufactured & Tested consistent with:
 - ANSI/IEEE C62.41.1-2002, C62.41.2-2002, C62.45-2002, C62.62-2010 and C62.72-2007
 - 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
- Solid State Bidirectional Operation

Diagnostic Monitoring

- 100% monitoring – Every MOV is monitored, incl. N-G
- Green LED Status indicator per phase
- Red LED service indicator
- Phase Loss monitoring (toggles LED & dry contact)
- Electrically isolated circuitry ensures surges do not damage diagnostics
- Optional: Audible Alarm & Form C Dry Contact (Contact rated 240V, 5A)

Quality, Standards & Validation

- Type 1: UL 1449 Fourth Edition, CSA 22.2 No. 269.1
- Type 2 (Opt.): UL 1449 Fourth Edition, CSA No. 269.2, UL 1283
- UL file: VZCA.E491875 at www.UL.com
- RoHS-compliant
- IEC 61643
- 10 year warranty (longer optional)
- Burn-In tested prior to shipment
- ISO 9001:2008 Quality Management System
- ISO 17025:2005 Laboratory Qualification



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ASP 

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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
- 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)
- 43 = 400Y/230V 3Ø 4W+Grnd (Fig 2)
- 51 = 480V B Corner Grnd Delta, 3Ø 3W+Grnd (Fig 6)
- 06 = 240V Delta - 3Ø 3W+Grnd (Fig 4)
- 61 = 240V B Corner Grnd Delta, 3Ø 3W+Grnd (Fig 6)
- 09 = 600V Delta - 3Ø 3W+Grnd (Fig 4) & HRG Wye
(Available: 100kA)
- 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

Options

- A = Audible Alarm & Dry Contacts, Form C, 240V, 5A
 - 2 = Type 2 SPD, incl. UL 1283 EMI/RFI Filters
- Available Accessory (order separately)
 KITFMXF = Flush Mount Kit
 RM = Remote Monitor

Enclosure Rating

4X = NEMA 4X Non-Metallic (size 6" x 6" x 4")

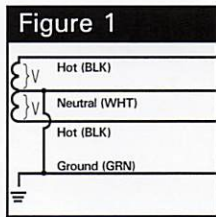


Figure 1
SPLIT
2 Hots, 1 Neu, 1 Grnd

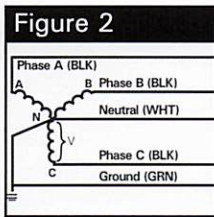


Figure 2
WYE
3 Hots, 1 Neu, 1 Grnd

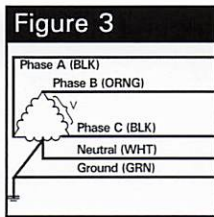


Figure 3
HI-LEG DELTA (B High)
3 Hots, (B HIGH),
1 Neu, 1 Grnd

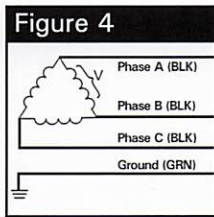


Figure 4
DELTA & HRG Wye
3 Hots, 1 Grnd

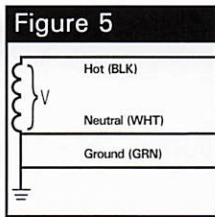


Figure 5
SINGLE POLE
1 Hot, 1 Neu, 1 Grnd

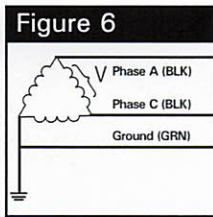


Figure 6
CORNER GROUND
DELTA (B grounded)
2 Hots, 1 Grnd

Performance Data

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

Other Available Systems:

Please see supplementary data sheet, contact us at (844) 697.6937 or confirm at www.UL.com using CCN of VZCA.