



Features:

- UL 1449 Fourth Edition recognized
- 100kA – 300kA per phase ratings
- Type 1: UL 1449 4th Edition, CSA 22.2 No. 269.1
- Type 2 (optional): UL 1449 4th Edition, CSA No. 269.2, UL 1283
- 20kA Inominal (I_n)
- 200kA SCCR's (most models)
- Complies with UL 96A 12th Edition master label requirements for lightning protection systems
- 100% monitoring – every MOV is monitored, including N-G
- All modes of protection
- Remote display on standard 60 in. ribbon cable.
- 10-year limited warranty

Performance Specifications

Surge capacities	L-N	L-G	N-G
100kA Per Phase	50kA	50kA	50kA
200kA Per Phase	100kA	100kA	100kA
300kA Per Phase	150kA	150kA	150kA
UL 1449 4th Edition recognized type 1 CA, CSA 22.2 No. 269.4-1			
Optional UL 1449 4th Edition type 2 CA, UL 1283 recognized, CSA 22.2 No. 269.4-2			
UL 1449 Fourth Edition tested Inominal (I_n): 20kA			
UL 1449 Fourth Edition tested SCCR: 200kA and 100kA			
UL 1449 Fourth Edition voltage protection ratings (VPRs):			
– 208Y/120V: as low as 700V			
– 480Y/277V: as low as 1200V			
AC sinewave tracking filter with EMI/RFI filtering up to -50dB from 10kHz to 100MHz (Type 2 option only, including UL 1283 recognized)			
Repetitive impulse: 5,000 hits			
Less than 1 nanosecond response time			

Diagnostic Monitoring

100% monitoring – every MOV is monitored, including 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 and dry contact
N-G overvoltage detection
Phase loss monitoring (toggles LED and dry contacts)
Form C dry contacts, 24V, 2A (two sets)
Surge counter, six-digit LCD, with test function, reset and no-maintenance Eprom memory
Remote display on standard 60 in. ribbon cable

Design Attributes

Designed, manufactured and tested consistent with:
– ANSI/IEEE C62.41.1-2002, C62.41.2-2002, C62.45-2002, C62.62-2010, C62.72-2016, IEEE SA 1100-2005 (Emerald Book)
– NEC® Article 285
– NEC® Articles 620.51(E), 645.18, 670.6, 695.15, 700.8 and 708 requiring SPDs
– Complies with UL 96A 12th Edition master label requirements for lightning protection systems and NFPA 780 Lightning Protection
– IEC 61643, CE
High energy parallel design for category C-high applications
For mounting internal to switchgear, motor controls centers, panelboards or control panels
Individually fused and thermally protected 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 (-13° F) to +60° C (140° F)
Weight: 4.2 lbs (1.9 kg)
Standard size: 6.5" x 11" x 4.5" (16.5cm x 29.9cm x 11.4cm)
Lug size: #2 - #14 AWG (with optional disconnect switch: #6 - #1/0)
Typical connection: #6 AWG and 60A breaker

Quality, Standards and Validation

Type 1: UL 1449 4th Edition, CSA 22.2 No. 269.4-1
Type 2 (Opt.): UL 1449 4th Edition, CSA No. 269.4-2, UL 1283 recognized
UL file: VZCA.E321351 at www.UL.com
RoHS-compliant
Operational test performed before shipment
ISO 9001:2008 quality management system
ISO 17025:2005 laboratory qualification

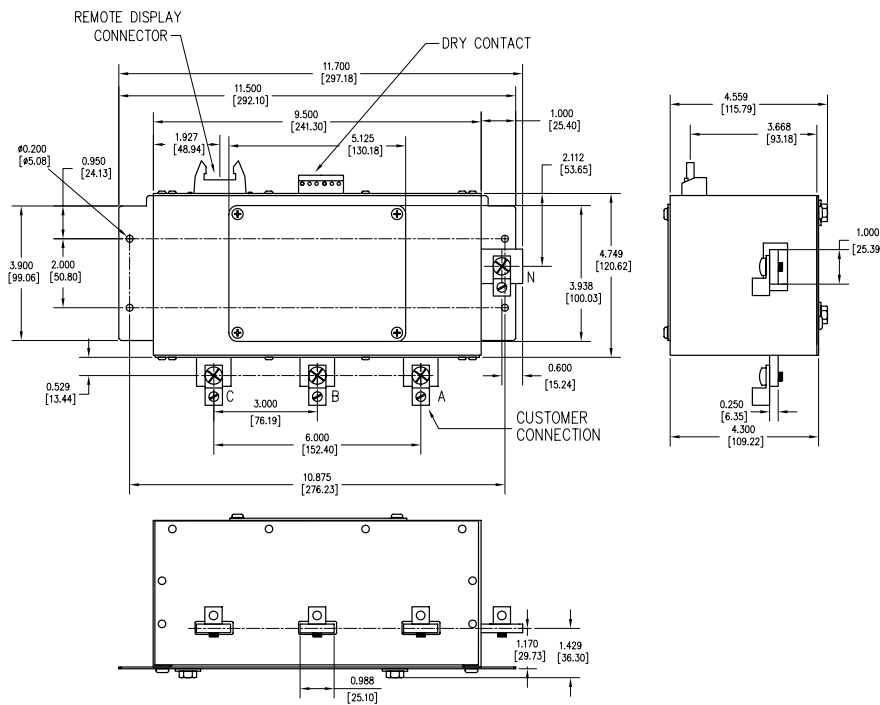
Model 450 Ordering Options

Connection	Monitoring	Surge Current Per Phase	Base Catalog Number
Lugs (#14 - #2)	LEDs, Audible Alarm, Relay, Surge Counter	100kA	450□□□□P10ACCN□0
		200kA	450□□□□P20ACCN□0
		300kA	450□□□□P30ACCN□0
Internal Rotary Disconnect Switch	LEDs, Audible Alarm, Relay, Surge Counter	100kA	450□□□□P10ARCN□0
		200kA	450□□□□P20ARCN□0
		300kA	450□□□□P30ARCN□0

Choose Voltage Code

Indicate UL Type 1 or 2

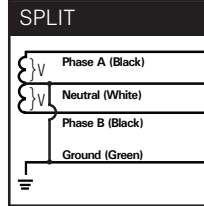
Dimensions (in. / mm)



Voltage Code

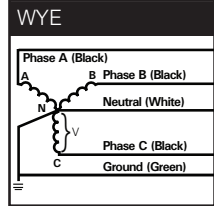
120/240V Split Phase (Figure 1)	120S
208Y/120V Wye (Figure 2)	120Y
380Y/220V, 400Y/230V Wye (Figure 2)	230Y
415Y/240V Wye (Figure 2)	240Y
240/120V Delta High Leg (Figure 3)	240H
480Y/277V Wye (Figure 2)	277Y
480V Delta (Figure 4)	480D
600Y/347V Wye (Figure 2)	347Y
600V Delta (Figure 4)	600D

Figure 1



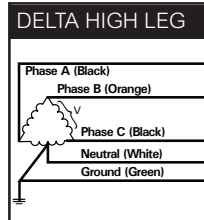
2 Phases, 1 Neutral, 1 Ground

Figure 2



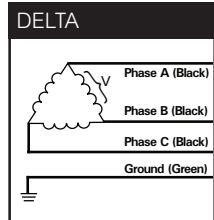
3 Phases, 1 Neutral, 1 Ground

Figure 3



(B High) 3 Phases, (B High) 1 Neutral, 1 Ground

Figure 4



3 Phases, 1 Ground

Performance Data

Common Power Systems	UL 1449 Fourth Edition Test Data						
	Voltage Protection Ratings (VPR - 3kA)				I _n	SCCR	MCOV
	L-N	L-G	N-G	L-L			
120S = 120/240V Split Phase	800	700	700	1200	20kA	100kA	150
120Y = 208Y/120V 3Ø Wye	800	700	700	1200	20kA	200kA	150
240H = 240Y/120V B High Leg Delta	800/1200	700/1200	700	1200/1800	20kA	200kA	150 / 320
277Y = 480Y/277V 3Ø Wye	1200	1200	1200	2000	20kA	200kA	320
480D = 480V 3Ø Delta	-	1800	-	1800	20kA	200kA	552
347Y = 600Y/347V 3Ø Wye	1500	1500	1500	2500	20kA	200kA	420

*VPRs with disconnect switch option could vary. Contact the factory for details.