



“X”
Monitoring
Option



“A”
Monitoring
Option



“C”
Monitoring
Option

Benefits:

- Directly Connected, Discrete Protection Elements
- UL 1449 Fourth Edition Listed
- 150kA – 300kA 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)
- 200kA SCCRs
- UL 96A Lightning Protection Master Label compliant
- Voltage Specific Design – Highly configurable
- All MOV suppression elements monitored
- All Modes of Protection
- 10 Year Warranty (longer optional)

Design Attributes

- Designed, Manufactured & 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 & 708 requiring SPDs
 - UL 96A and NFPA 780 Lightning Protection
 - IEC 61643, CE

High Energy Parallel Design for Category C-High applications

For external Mounting on Electrical Distribution Equipment, Switchgear, Switchboards, Motor Control Centers, Panelboards, Transfer Switches, etc.

Individually Fused & Thermally Protected MOVs

Large-Block, 34mm square, 50kA MOVs

Solid State Bidirectional Operation

Performance Specifications

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

Surge Capacities	L-N	L-G	N-G	L-L
150kA Per Phase	50kA	50kA	50kA	50kA
300kA Per Phase	100kA	100kA	100kA	100kA

UL 1449 Fourth Edition Listed Type 1

Optional UL 1449 Fourth Edition Type 2 SPD, cUL

UL 1449 Fourth Edition tested Inominal (I_n): 20kA

UL 1449 Fourth Edition tested SCCR: 200kA

UL 1449 Fourth Edition Voltage Protection Ratings (VPRs):

- 208Y/120V: as low as 800V
- 480Y/277V: as low as 1200V (data table on back)

AC Sinewave Tracking Filter with EMI/RFI Filtering up to -50dB from 10kHz to 100MHz (Type 2 option only, incl. UL 1283 Listing)

Repetitive Impulse: 10,000 hits

Less than 1 nanosecond response time

Physical Specifications

Relative Humidity Range: 0 - 95% non-condensing

Operating Frequency: 47 - 63Hz

Operating Temperature: -35°C (-31°F) to +85°C (185°F)

Weight: 4.5 lbs (2.1 kg)

Standard NEMA 4X polycarbonate enclosure

Standard size: 9.6" x 4.9" x 4" (244mm x 124mm x 102mm)

Lug size: #12 - #10 AWG

Includes 12' long ½" flexible conduit & connector

Typical connection: #10 AWG and 30A breaker

Diagnostic Monitoring

100% monitoring – Every MOV is monitored, including N-G

'A' (standard) : Green LED Status indicator, Red LED service indicator, Audible Alarm, Form C Dry Contacts rated 250V, 5A

'C' option: Adds Touch Pad with Green LED on each phase, Touch to Test, Touch Alarm Silence, N-G Overvoltage Indicator, Surge Counter (six digit) with Memory, Touch Increment & Reset, Form C Dry Contacts rated 250V, 5A

Electrically isolated circuitry ensures surges do not damage diagnostics

Available Active Surge Monitor (ASM), see pub. DS-70137 & SL-70109

Form C Dry Contacts rated for ASM 24V, 5A

Quality, Standards & Validation

Type 1: UL 1449 Fourth Edition

Type 2 (Opt.): UL 1449 Fourth Edition, cUL, UL 1283

UL file: VZCA.E324279 at www.UL.com

RoHS-compliant

Burn-In tested prior to shipment

ISO 9001:2008 Quality Management System

ISO 17025:2005 Laboratory Qualification

Model 445 Number Configurator & Options

445
Model 445
Product Line

□□□□
Voltage Codes

P
Per Phase
kA Rating
System

□□
kA Rating
Per Phase

A
Modes of
Protection
(Default)

□
Connection
Type

□
Monitoring
Options

□
Enclosure

□
UL 1449
Type1/Type 2

0
Accessory/
Option(s)

Common Systems

- 120S = 240/120V Split Phase - 1Ø, 3W+Grnd, (Fig 1)
- 120Y = 208Y/120V Wye - 3Ø 4W+Grnd, (Fig 2)
- 277Y = 480Y/277V Wye - 3Ø 4W+Grnd, (Fig 2)
- 347Y = 600Y/347V Wye - 3Ø 4W+Grnd, (Fig2)

Other Available Systems - Confirmation Encouraged

- 127Y = 220Y/127V Wye - 3Ø 4W+Grnd (Fig 2)
- 220Y = 380Y/220V Wye - 3Ø 4W+Grnd (Fig 2)
- 230Y = 400Y/230V Wye - 3Ø 4W+Grnd (Fig 2)
- 240Y = 415Y/240V Wye - 3Ø 4W+Grnd (Fig 2)
- 254Y = 440Y/250V Wye - 3Ø 4W+Grnd (Fig 2)

- 15 = 150kA
- 30 = 300kA

- C = Compression Lugs
(Not Available with ASM)
- W = Wire Leads

- A = LEDs/Audible Alarm/Relay
- C = 'A' above plus N-G LED and Surge Counter
- T = Active Surge Monitor (ASM)
Only Available with "J" Enclosure
- X = Active Surge Monitor (ASM)
with Front Ethernet Connection
Only Available with "C" Enclosure
(For more info on ASM See Pubs. DS-70137 & SL-70109)

- 1 = UL 1449 Type 1
- 2 = UL 1449 Type 2,
(Includes UL1283 Filter)

0 = No Trailing Accessory/Option

- J = NEMA 4X Non-Metallic Polycarbonate *(Standard)*
- C = NEMA 1 Non-Metallic *(Polycarbonate)*
Only Available with "X" Monitoring

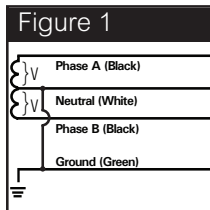


Figure 1
SPLIT
2 Phases, 1 Neutral,
1 Ground

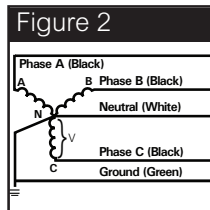
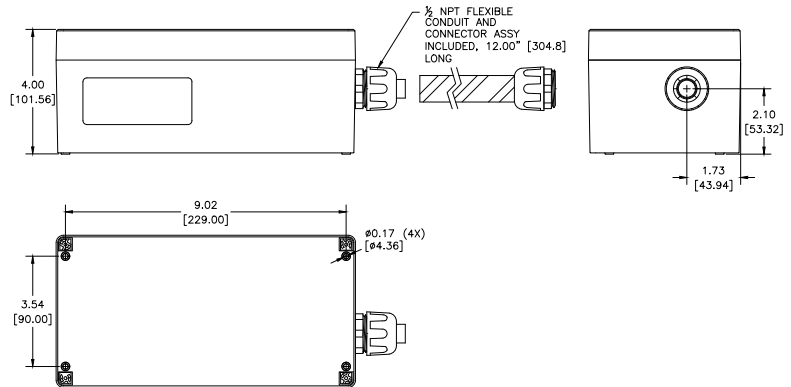
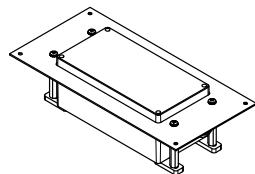


Figure 2
WYE
3 Phases, 1 Neutral,
1 Ground



Kits

440FMKIT-CW
Model 445 Flush Mount Kit
(Ordered separately)



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 = 240/120V Split Phase		800	800	800	1200	20kA	200kA	180
120Y = 208Y/120V 3Ø Wye		800	800	800	1200	20kA	200kA	180
220Y = 380Y/220V 3Ø Wye		1200	1200	1200	1800	20kA	200kA	320
277Y = 480Y/277V 3Ø Wye		1200	1200	1200	1800	20kA	200kA	320
347Y = 600Y/347V 3Ø Wye		1500	1500	1500	2500	20kA	200kA	420