

**Features:**

- **UL 1449 Third Edition Listed**
- **Type 1 SPD –**
 - All UL required OCP & Safety Coordination included inside
 - Can be installed line-side or load-side of main disconnect
- **20kA Inominal (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**
- **Optional Rotary Disconnect Switch**

Performance Specifications

- **Surge Capacities** (L-N, L-G, N-G)
 - 300kA/phase**
 - 400kA/phase**
 - 500kA/phase**
- 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: 20kA & 10kA
- 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 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 (toggles LED & dry contacts)
- Electrically isolated circuitry ensures surges do not damage diagnostics
- 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
- High Energy Parallel Design for Category C3 applications, the highest exposure to surge activity
- For External Mounting next to Switchgear, Motor Controls Centers or Panelboards
- Individually Fused & Thermally Protected MOVs
- Large-Block 34mm square 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" (305mm x 305mm x 191mm)
- 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 R/C
- UL file: VZCA.E321351 at www.UL.com
- RoHS-compliant
- IEC 61643, CE
- 10 year warranty
- Burn-In tested Prior to Shipment
- ISO 9001:2000 Quality Management System
- ISO 17025:2005 Laboratory Qualification
- Made in USA



TEXAS Model Number Configurator & Options

TE 02 XAS 20 E1 XD M

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 (450kA replaces 400kA or 500kA)
- 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 = 480/240V Split Phase, or Two legs of Wye (Call)
- 21 = 220Y/127V Wye - 3Ø 4W+Grnd (Fig 2)
- 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)
- 51 = 480V B Corner Grnd Delta, 3Ø 3W+Grnd (Fig 6) (450kA replaces 400kA or 500kA)
- 06 = 240V Delta - 3Ø 3W+Grnd (Fig 4) (450kA replaces 400kA or 500kA)
- 61 = 240V B Corner Grnd Delta, 3Ø 3W+Grnd (Fig 6) (450kA replaces 400kA or 500kA)
- 07 = 380Y/220V Wye - 3Ø 4W+Grnd (Fig 2)
- 09 = 600V Delta - 3Ø 3W+Grnd (Fig 4) & HRG Wye (Available: 100kA, 150kA, 200kA, 250kA)
- 91 = 600V B Corner Grnd Delta, 3Ø 3W+Grnd (Fig 6) (Available: 100kA, 150kA, 200kA, 250kA)
- 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

- 30 = 300kA/Phase
- 40 = 400kA/Phase
- 50 = 500kA/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 Switch, Bussmann, UL98
- T = Thru-Door Rotary Disconnect Switch, Bussmann, UL98, E1 enclosure only (Consult factory for other disconnect switch options)
- 2 = Type 2 SPD Bearing cUL Mark

Delete Options - Consult Factory for Order Code

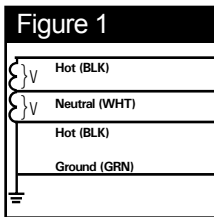
- Delete L-N Protection (reduces kA rating)
- Delete L-G Protection (reduces kA rating)
- Delete N-G Protection (reduces kA rating)
- Delete Noise Filtering

Available Accessory (order separately)

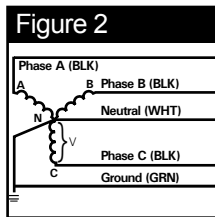
- RM = Remote Monitor

Enclosure Rating

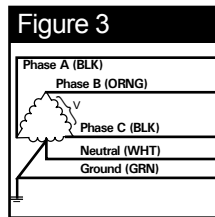
- E1 = NEMA 1/12/3R/4 (size: 12" x 12" x 7.5")
 - 4X = NEMA 4X Non-Metallic (size: 14" x 12" x 6") (polycarbonate, display inside clear front door)
 - 4S = NEMA 4X Stainless Steel (size: 12" x 12" x 6") (display inside door)
 - FM = NEMA 1 Flush Mount (wall cavity size: 12" x 12" x 6" deep)
 - P1 = NEMA 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 models > 300kA)



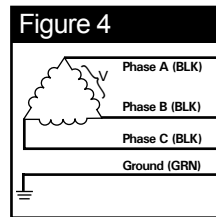
SPLIT
2 Hots, 1 Neu, 1 Grnd



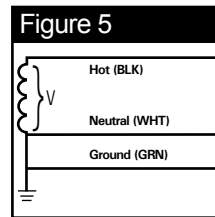
WYE
3 Hots, 1 Neu, 1 Grnd



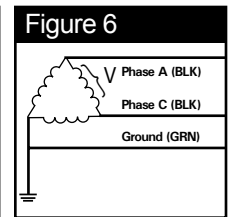
HI-LEG DELTA (B HIGH)
3 Hots, (B HIGH),
1 Neu, 1 Grnd



DELTA & HRG WYE
3 Hots, 1 Grnd



SINGLE POLE
1 Hot, 1 Neu, 1 Grnd



CORNER GROUND DELTA (B grounded)
3 Hots, 1 Grnd

Performance Data

Common Voltages	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 (<300kA)	700	700	700	1200	Type 1	20kA	100kA	150
01 = 240/120V Split Phase (=>300kA)	700	600	600	1000	Type 1	20kA	100kA	150
02 = 208Y/120V 3Ø Wye (<300kA)	700	700	700	1200	Type 1	20kA	200kA	150
02 = 208Y/120V 3Ø Wye (=>300kA)	700	600	600	1000	Type 1	20kA	200kA	150
03 = 240Y/120V B High Leg Delta	700/1200	700/1200	700	1800	Type 1	20kA	200kA	150 / 320
04 = 480Y/277V 3Ø Wye (<300kA)	1200	1200	1200	2000	Type 1	20kA	200kA	320
04 = 480Y/277V 3Ø Wye (=>300kA)	1200	1000	1000	1800	Type 1	20kA	200kA	320
07 = 380Y/220V Wye	1200	1200	1200	2000	Type 1	20kA	200kA	320
21 = 220Y/127V Wye	900	800	800	1500	Type 1	20kA	200kA	180

Other Available Systems:

Please see supplementary data sheet, contact us at info@pqglobal.com, or confirm at www.UL.com using CCN of VZCA
Optional disconnect switch may increase VPRs

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