



**ADVANCED PROTECTION  
TECHNOLOGIES INC.**

# TEXAS Series

## Type 1/Type 2 Surge Protective Device/SPD



### Features:

- **UL 1449 Fourth Edition Listed**
- **100kA – 500kA 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 (most models)**
- **200kA SCCRs (most models)**
- **UL 96A Lightning Protection Master Label compliant (@20kA I<sub>n</sub>)**
- **Voltage Specific Design – Highly configurable**
- **All MOV suppression elements monitored**
- **All Modes of Protection**
- **Optional Rotary Disconnect Switch**

### Performance Specifications

| Surge Capacities       | L-N   | L-G   | N-G   | L-L   |
|------------------------|-------|-------|-------|-------|
| <b>100kA Per Phase</b> | 50kA  | 50kA  | 50kA  | 100kA |
| <b>150kA Per Phase</b> | 100kA | 50kA  | 50kA  | 150kA |
| <b>200kA Per Phase</b> | 100kA | 100kA | 100kA | 200kA |
| <b>250kA Per Phase</b> | 150kA | 100kA | 100kA | 250kA |
| <b>300kA Per Phase</b> | 150kA | 150kA | 150kA | 300kA |
| <b>400kA Per Phase</b> | 200kA | 200kA | 200kA | 400kA |
| <b>500kA Per Phase</b> | 250kA | 250kA | 250kA | 500kA |

- 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: 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
- 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)

### 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, 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
- 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" (305mm x 305mm x 177mm)
- Lug size: #2 - #14 AWG (w/opt. disconnect: #6 - #1/0)
- Typical connection: #6 AWG and 60A breaker

### 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.E321351 at [www.UL.com](http://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



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XAS



### 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 = 480/277V 2-Pole, (480/240V Split Phase) (Fig 1)
- 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

- 10 = 100kA/Phase
- 15 = 150kA/Phase
- 20 = 200kA/Phase
- 25 = 250kA/Phase
- 30 = 300kA/Phase
- 40 = 400kA/Phase
- 45 = 450kA/Phase
- (Voltage Codes 05, 51, 06 & 61)
- 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, ABB, UL98
- T = Thru-Door Rotary Disconnect Switch, ABB, UL98, E1 enclosure only (Consult factory for other disconnect switch options)
- 2 = Type 2 SPD, incl. UL 1283 EMI/RFI Filters

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")
- 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)

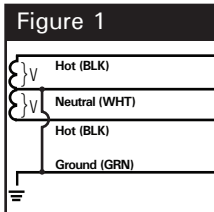


Figure 1  
SPLIT  
2 Hots, 1 Neu, 1 Grnd

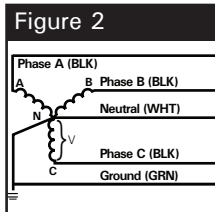


Figure 2  
WYE  
3 Hots, 1 Neu, 1 Grnd

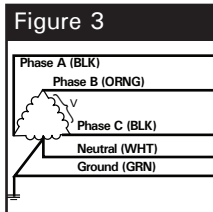


Figure 3  
HI-LEG DELTA (B High)  
3 Hots, (B HIGH),  
1 Neu, 1 Grnd

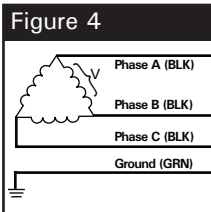


Figure 4  
DELTA & HRG WYE  
3 Hots, 1 Grnd

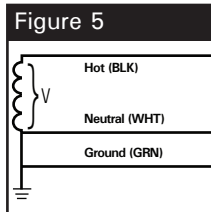


Figure 5  
SINGLE POLE  
1 Hot, 1 Neu, 1 Grnd

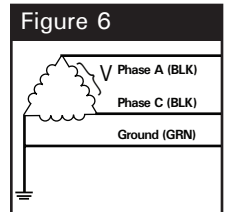


Figure 6  
CORNER GROUND  
DELTA (B grounded)  
2 Hots, 1 Grnd

## Performance Data

| Common North American Systems |                                  | UL 1449 Fourth Edition Test Data       |          |      |      |                |       |           |
|-------------------------------|----------------------------------|----------------------------------------|----------|------|------|----------------|-------|-----------|
|                               |                                  | Voltage Protection Ratings (VPR - 3kA) |          |      |      |                |       |           |
|                               |                                  | L-N                                    | L-G      | N-G  | L-L  | I <sub>n</sub> | SCCR  | MCOV      |
| 01                            | = 240/120V Split Phase (<300kA)  | 700                                    | 700      | 700  | 1200 | 20kA           | 100kA | 150       |
| 01                            | = 240/120V Split Phase (=>300kA) | 700                                    | 600      | 600  | 1000 | 20kA           | 100kA | 150       |
| 02                            | = 208Y/120V 3Ø Wye (<300kA)      | 700                                    | 700      | 700  | 1200 | 20kA           | 200kA | 150       |
| 02                            | = 208Y/120V 3Ø Wye (=>300kA)     | 700                                    | 600      | 600  | 1000 | 20kA           | 200kA | 150       |
| 03                            | = 240Y/120V B High Leg Delta     | 700/1200                               | 700/1200 | 700  | 1800 | 20kA           | 200kA | 150 / 320 |
| 04                            | = 480Y/277V 3Ø Wye (<300kA)      | 1200                                   | 1200     | 1200 | 2000 | 20kA           | 200kA | 320       |
| 04                            | = 480Y/277V 3Ø Wye (=>300kA)     | 1200                                   | 1000     | 1000 | 1800 | 20kA           | 200kA | 320       |
| 05                            | = 480V 3Ø Delta (<300kA)         | -                                      | 1800     | -    | 1800 | 10kA           | 200kA | 550       |
| 05                            | = 480V 3Ø Delta (=>450kA)        | -                                      | 1800     | -    | 1800 | 20kA           | 200kA | 550       |
| 07                            | = 380Y/220V 3Ø Wye (<300kA)      | 1200                                   | 1200     | 1200 | 2000 | 20kA           | 200kA | 320       |
| 08                            | = 600Y/347V 3Ø Wye (<300kA)      | 1500                                   | 1500     | 1500 | 2500 | 10kA           | 200kA | 420       |
| 08                            | = 600Y/347V 3Ø Wye (=>300kA)     | 1500                                   | 1500     | 1500 | 2500 | 20kA           | 200kA | 420       |

#### Other Available Systems:

Please see supplementary data sheet, contact us at [info@aptsurge.com](mailto:info@aptsurge.com) or confirm at [www.UL.com](http://www.UL.com) using CCN of VZCA.  
 Optional disconnect switch may increase VPRs.

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