

# TPS3 09

## Type 1 Surge Protective Device (SPD)

Mounts External to Electrical Distribution Equipment or Internal to P1, P2 Lighting Panelboards, P3 Power Panelboards and Busway Systems

### Features:

- UL 1449 3rd Edition – 2009, cUL
- Type 1 SPD (Type 2 cUL)
- Mounts external to electrical distribution equipment
  - Weatherproof hub included
- Mounts internal to P1 panelboards & busway
  - P1 - Field retrofit or factory install
  - P2 and P3 - Factory install only
  - Consult factory for field retrofit*
- Large block, individually fused, thermally protected, 50kA MOV's
- 20kA  $I_n$  (most models)
- 200kA SCCR (most models)
- All UL-required OCP & safety coordination included
- UL96A Lightning Protection Master Label compliant (@20kA In)
- SPD Specifications
  - Surge Current Rating Per Phase

| Per Phase | L-N  | L-G  | N-G  |
|-----------|------|------|------|
| 100kA     | 50kA | 50kA | 50kA |

  - 100% monitoring – Every MOV is monitored, incl. N-G
  - Individually fused and thermally protected MOV's
  - Solid state bi-directional operation
  - Repetitive impulse: 5,000 hits
  - Less than 1 nanosecond response time
  - Relative humidity range: 0 -95% non-condensing
  - Operating frequency: 47-63Hz
  - Operating temperature: -25°C (-15°F) to +60°C (140°F)
- Standard Configuration
  - Standard NEMA 4X polycarbonate enclosure (UL 746C (f1), UL 94-5VA)
  - Wire size: Prewired with 3' (91.4cm) of #10 AWG
  - Standard size: 8" x 3" x 3" (203mm x 76mm x 76mm)
  - Standard weight: 3 lbs. (1.4 kg)



UL 1449 3rd Edition SPD

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- SPD Features
- UL 1449 3rd Edition effective September 2009
- Designed, manufactured and tested consistent with:
  - ANSI/IEEE C62.41.1-2002, C62.41.2-2002, C62.45-2002,
  - 1992/2000 NEMA LS-1
  - NEC Article 285
  - IEC 61643, CE

- SPD Features
- Large block, individually fused, thermally protected, 50kA MOV's
- 10 year warranty
- SPD Monitoring
- LED indicators
- Available Options
- Dry contacts & audible alarm

- Key Bid Specifications
- UL 1449 3rd Edition – 2009, cUL
- Type 1 SPD (Type 2 cUL)
- Protection modes on L-N, L-G, L-L, N-G
- I<sub>n</sub> Rating – 20kA
- Short Circuit Current Rating – 200kA
- Surge Current Rating  
Per Phase = L-N + L-G  
100kA      50kA      50kA

## Ordering Information

Catalog #      **TPS3**  **09**

Voltage Code  
 A = 120/240V, 1Ø, 3W (Fig 1)  
 B = 120/240V, 3Ø, 4W (Fig 3)  
 C = 120/208V, 3Ø, 4W (Fig 2)  
 D = 240V, 3Ø, 3W (Fig 4)  
 E = 277/480V, 3Ø, 4W (Fig 2)  
 F = 480V, 3Ø, 3W (Fig 4)  
 G = 600V, 3Ø, 3W, (Fig 2)  
 K = 380/220V, 3Ø, 4W (Fig 2)  
 L = 600/347V, 3Ø, 4W (Fig 2)  
 S = 400/230V, 3Ø, 4W (Fig 2)

Surge Current (kA)  
 10 = 100kA per phase

Options  
 E = Extended indicator light  
 I = Internal mounting in P1, P2 panels\*  
 D = Dry contact & audible alarm  
 \*Requires TPS9IKITP1 or TPS9IKITP2 mounting bracket accessory, see below

- Example: TPS3C0910D00 = SPD for a 208/120V panelboard with a surge current capacity of 100kA per phase with standard NEMA 4X enclosure, dry contacts and audible alarm option.
- Available for field retrofit in P1 panels
- When an option is not selected, include a zero (0) in the field

Available accessories: Must be ordered separately

- RMSIE = Remote monitor
- FMKITC = Flush mount plate
- TPS9IKITP1 = Mounting bracket for installation in P1 panels
- TPS9IKITP2 = Mounting bracket for installation in P2 panels

| UL 1449 3rd Edition - 2009 Test Data Summary |                          |            |            |      |            |        |      |       |           |
|--|--------------------------|------------|------------|------|------------|--------|------|-------|-----------|
| Voltage Protection Rating (VPR - 6kV, 3kA)   |                          |            |            |      |            |        |      |       |           |
| Voltage Code                                 | Service Voltage          | L-N        | L-G        | N-G  | L-L        | Type*  | In   | SCCR  | MCOV      |
| A  | 120/240V, 1Ø, 3W (Fig 1) | 600        | 700        | 500  | 1000       | Type 1 | 20kA | 100kA | 150       |
| B  | 120/240V, 3Ø, 4W (Fig 3) | 600 / 1200 | 700 / 1200 | 500  | 1000/ 1000 | Type 1 | 20kA | 200kA | 150 / 320 |
| C  | 120/208V, 3Ø, 4W (Fig 2) | 600        | 700        | 500  | 1000       | Type 1 | 20kA | 200kA | 150       |
| D  | 240V, 3Ø, 3W (Fig 4)     |            | 1200       |      | 1200       | Type 1 | 20kA | 200kA | 320       |
| E  | 277/480V, 3Ø, 4W (Fig 2) | 1200       | 1200       | 1000 | 1800       | Type 1 | 20kA | 200kA | 320       |
| F  | 480V, 3Ø, 3W (Fig 4)     |            | 1800       |      | 1800       | Type 1 | 10kA | 200kA | 552       |
| G  | 600V, 3Ø, 3W (Fig 2)     |            | 2500       |      | 2500       | Type 1 | 10kA | 200kA | 690       |
| K  | 380/220V, 3Ø, 4W (Fig 2) | 1200       | 1200       | 1000 | 1800       | Type 1 | 20kA | 200kA | 320       |
| L  | 600/347V, 3Ø, 4W (Fig 2) | 1500       | 1500       | 1500 | 2500       | Type 1 | 10kA | 200kA | 420       |
| S  | 400/230V, 3Ø, 4W (Fig 2) | 1200       | 1200       | 1000 | 1800       | Type 1 | 20kA | 200kA | 320       |

\* Type 2 cUL

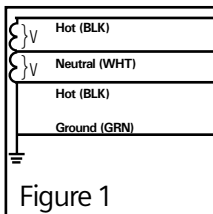


Figure 1  
Split  
2 Hots, 1 Neu, 1 Grnd

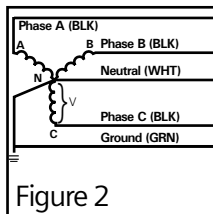


Figure 2  
Wye  
3 Hots, 1 Neu, 1 Grnd

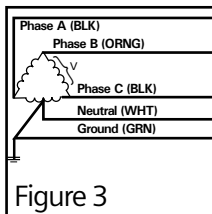


Figure 3  
Hi-Leg Delta (B High)  
3 Hots, (B High),  
1 Neu, 1 Grnd

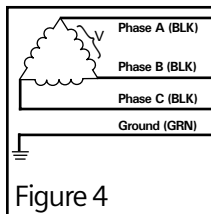


Figure 4  
Delta & HRG Wye  
3 Hots, 1 Grnd

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RPFL-IADT1-0809 (New)

www.usa.siemens.com/spd

# TPS3 01

## Surge Protection Device (SPD)

### for P1, P2 Lighting Panelboards and P3 Power Distribution Panelboards, Motor Control Centers and Busway Systems

#### Features:

- Mounts internal to:
  - P1, P2 and P3 panels
  - TIASTAR motor control centers - standard 6" bucket
  - STP series busplug on SX series busway
- Consult factory for field retrofit in P1 panels
- UL 1449 3rd Edition – 2009, cUL
- Type 4 SPD intended for use in Type 1 applications (Type 2 cUL)
- UL Type 1 tested with all internal OCP and safety coordination features included
- Large block, individually fused, thermally protected, 50kA MOV's
- 20kA  $I_n$  (most models)
- 200kA SCCR (most models)

#### ■ Applications

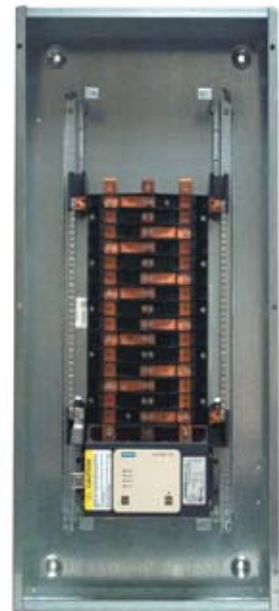
- Provides main service or downstream protection for sensitive computer and electronic loads
  - Standard redundancy use: 100kA per phase
  - Increased redundancy use: 200kA per phase
  - Maximum redundancy use: 300kA per phase

#### ■ SPD Specification

- Surge Current Rating Per Phase

| Per Phase | L-N   | L-G   | N-G   |
|-----------|-------|-------|-------|
| 100kA     | 50kA  | 50kA  | 50kA  |
| 150kA     | 100kA | 50kA  | 50kA  |
| 200kA     | 100kA | 100kA | 100kA |
| 250kA     | 150kA | 100kA | 100kA |
| 300kA     | 150kA | 150kA | 150kA |

- 100% monitoring – Every MOV is monitored, incl. N-G
- EMI/RFI filtering: Active tracking up to -50db from 10kHz to 100MHz
- Repetitive impulse: 5,000 hits
- Less than 1/2 nanosecond response time
- Relative humidity range: 1-95% non-condensing
- Operating frequency: 47-63Hz
- Operating temperature: -25°C (-15°F) to +60°C (140°F)



UL 1449 3rd Edition SPD

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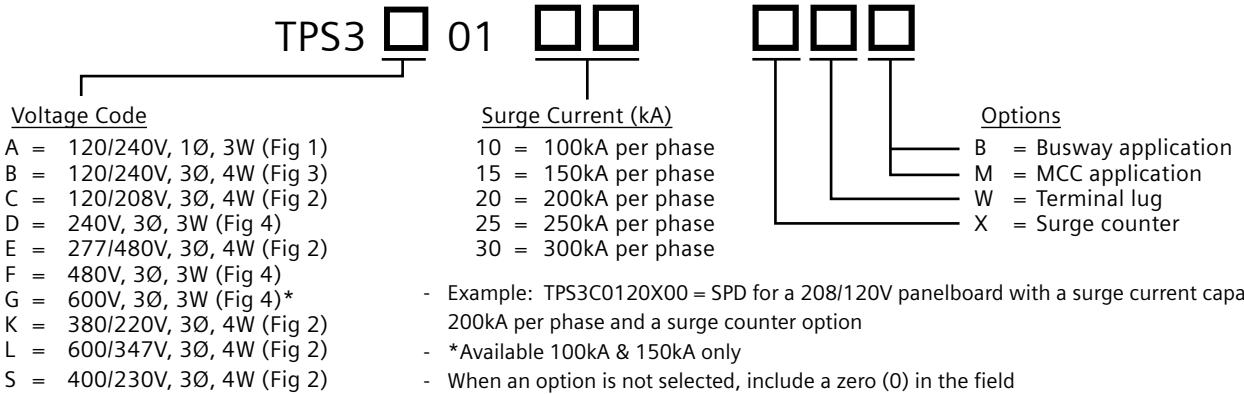
- SPD Features
- UL 1449 3rd Edition effective September 2009
- Designed, manufactured & tested consistent with:
  - ANSI/IEEE C62.41.1-2002, C62.41.2-2002, and C62.45-2002
  - 1992/2000 NEMA LS-1
  - NEC Article 285
  - IEC 61643, CE
- Large block, individually fused, thermally protected, 50kA MOV's

- SPD Features
- Direct bus connected or can be wired to a circuit breaker (include W option)
- 10 year warranty
- Standard Monitoring
- LED indicators
- Audible alarm with silence switch and test button
- Dry contacts
- Available Options
- Surge counter
- Terminal lug for circuit breaker connection

- Key Bid Specifications
  - UL 1449 3rd Edition - 2009, cUL
  - Audible alarm with silence switch and test button
  - Dry contacts
  - EMI/RFI filtering
  - Protection modes on L-N, L-G, L-L, N-G
  - $I_n$  Rating - 20kA
  - Short Circuit Current Rating - 200kA
  - Surge Current Rating
- |           |   |      |   |      |
|-----------|---|------|---|------|
| Per Phase | = | L-N  | + | L-G  |
| 100kA     |   | 50kA |   | 50kA |

Ordering Information

Catalog #



- Example: TPS3C0120X00 = SPD for a 208/120V panelboard with a surge current capacity of 200kA per phase and a surge counter option
  - \*Available 100kA & 150kA only
  - When an option is not selected, include a zero (0) in the field
- Available accessories: Must be ordered separately
- RMSIE = Remote monitor

| UL 1449 3rd Edition - 2009 Test Data Summary |                          |            |            |      |             |        |      |       |           |
|--|--------------------------|------------|------------|------|-------------|--------|------|-------|-----------|
| Voltage Protection Rating (VPR - 6kV, 3kA)   |                          |            |            |      |             |        |      |       |           |
| Voltage Code                                 | Service Voltage          | L-N        | L-G        | N-G  | L-L         | Type   | In   | SCCR  | MCOV      |
| A  | 120/240V, 1Ø, 3W (Fig 1) | 700        | 700        | 700  | 1200        | Type 4 | 20kA | 100kA | 150       |
| B  | 120/240V, 3Ø, 4W (Fig 3) | 700 / 1200 | 700 / 1200 | 700  | 1800 / 1800 | Type 4 | 20kA | 200kA | 150 / 320 |
| C  | 120/208V, 3Ø, 4W (Fig 2) | 700        | 700        | 700  | 1200        | Type 4 | 20kA | 200kA | 150       |
| D  | 240V, 3Ø, 3W (Fig 4)     |            | 1200       |      | 1200        | Type 4 | 10kA | 200kA | 320       |
| E  | 277/480V, 3Ø, 4W (Fig 2) | 1200       | 1200       | 1200 | 2000        | Type 4 | 20kA | 200kA | 320       |
| F  | 480V, 3Ø, 3W (Fig 4)     |            | 1800       |      | 1800        | Type 4 | 10kA | 200kA | 550       |
| G  | 600V, 3Ø, 3W (Fig 4)     |            | 2500       |      | 2500        | Type 4 | 10kA | 200kA | 690       |
| K  | 380/220V, 3Ø, 4W (Fig 2) | 1200       | 1200       | 1200 | 2000        | Type 4 | 20kA | 200kA | 320       |
| L  | 600/347V, 3Ø, 4W (Fig 2) | 1500       | 1500       | 1500 | 2500        | Type 4 | 10kA | 200kA | 420       |
| S  | 400/230V, 3Ø, 4W (Fig 2) | 1200       | 1200       | 1200 | 2000        | Type 4 | 20kA | 200kA | 320       |

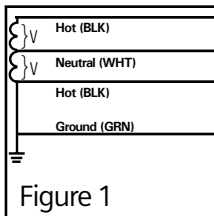


Figure 1  
Split  
2 Hots, 1 Neu, 1 Grnd

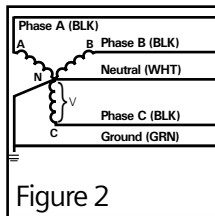


Figure 2  
Wye  
3 Hots, 1 Neu, 1 Grnd

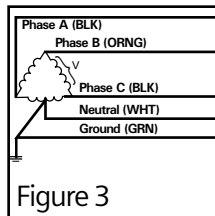


Figure 3  
Hi-Leg Delta (B High)  
3 Hots, (B High),  
1 Neu, 1 Grnd

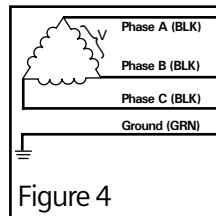


Figure 4  
Delta & HRG Wye  
3 Hots, 1 Grnd

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RPFL-IADT1-0809 (New)

www.usa.siemens.com/spd

# TPS3 06

## Surge Protection Device (SPD)

for Service Entrance Applications – SB1, SB2, SB3, Type RCS Switchboards, Type WL Low Voltage Switchgear, Motor Control Centers and Busway Systems

### Features:

- Mounts internal to:
  - SB1, SB2, SB3 & Type RCS switchboards
  - Type WL low voltage switchgear
  - TIASTAR motor control centers - standard 12" bucket
  - STP series busplug on SX series busway
- UL 1449 3rd Edition – 2009, cUL
- Type 4 SPD intended for use in Type 1 applications (Type 2 cUL)
- UL Type 1 tested with all internal OCP and safety coordination features included
- Large block, individually fused, thermally protected, 50kA MOV's
- 20kA  $I_n$  (most models)
- 200kA SCCR (most models)
- Rotary disconnect switch included
- All UL-required OCP & safety coordination included
- Applications
  - Provides main service entrance or downstream protection for sensitive computer and electronic loads
    - Standard redundancy use: 300kA per phase
    - Increased redundancy use: 400kA per phase
    - Maximum redundancy use: 500kA per phase

### ■ SPD Specifications

- Surge Current Rating Per Phase

| Per Phase | L-N   | L-G   | N-G   |
|-----------|-------|-------|-------|
| 100kA     | 50kA  | 50kA  | 50kA  |
| 150kA     | 100kA | 50kA  | 50kA  |
| 200kA     | 100kA | 100kA | 100kA |
| 250kA     | 150kA | 100kA | 100kA |
| 300kA     | 150kA | 150kA | 150kA |
| 400kA     | 200kA | 200kA | 200kA |
| 500kA     | 250kA | 250kA | 250kA |

- 100% monitoring – Every MOV is monitored, incl. N-G
- EMI/RFI filtering: Active tracking up to -50db from 10kHz to 100MHz
- Repetitive impulse: 5,000 hits
- Less than 1/2 nanosecond response time
- Relative humidity range: 1-95% non-condensing
- Operating frequency: 47-63Hz
- Operating temperature: -25°C (-15°F) to +60°C (140°F)



UL 1449 3rd Edition SPD

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