POWER PRODUCT Surge Protection Devices (SPD)

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Integrally Mounted SPDs



Features

- Per Phase Surge Current Capacity ranging from 100 kA to 1000 kA
- Industry best VPRs
- I_n = 20 kA (most models)
- Across the board UL 96A compliance (most models)
- Ground Integrity Monitoring (GIM) diagnostics

External or Wall Mounted SPDs



Features

- Per Phase Surge Current Capacity ranging from 50 kA to 1000 kA
- Industry best VPRs
- $I_n = 20 \text{ kA (most models)}$
- Across the board UL 96A compliance (most models)
- Ground Integrity Monitoring (GIM) diagnostics (excluding TPS3 03 & TPS3 09)

Residential SPDs



Features

- Per Phase Surge Current Capacity of 40 kA or 50 kA
- Complete Service Protection for
 - Power
 - Telephone
 - Coax
- Ground Integrity Monitoring (GIM) diagnostics

Introduction

In today's electronic world, home and business electrical systems just aren't complete unless they incorporate surge protection. **Stopping Surges Before They Get In** to these systems is best accomplished through the installation of appropriately sized hard-wired Surge Protective Devices (SPDs) beginning at the incoming service followed by installations at other key surge entry points.

When Siemens first developed the Transient Protection System (TPS) family of surge protectors, we knew early on that hard-wired surge protectors needed fully coordinated safety controls. This led to the adoption of a number of SPD industry safety control firsts including the patented Ceramgard and TranSafe circuitry, coordinated fusing and thermal cutouts, dielectric isolation, mechanical reinforcing taping resulting in a design that ensures the highest possible electrical system protection and reliability.

Our next generation UL 1449 3rd Edition TPS3 SPDs carry on this same legacy. Every TPS3 is infused with Siemens engineering and safety and performance "know-how." Siemens SPDs have the highest degree of safety while delivering the industy's best performance ratings - some of the

lowest Voltage Protection Ratings (VPRs), 'Type 1 (Type 2 cUL)' and 20kA I-nominal ratings (for most models), with surge current ratings from 50kA to 1000kA.

Electrical disturbances will always occur, but they don't have to cause surge protectors to fail in an unsafe manner. Safer surge protection means uncompromised electrical system **protection**, **safety**, **and reliability**.

The following pages provide additional technical and ordering information concerning our TPS3 family of Surge Protective Devices (SPDs).

Surge Protector Per Phase Surge Current Capacities

Wall Mounted Standard Mode				10 Mode SPDs				
	TPS3 03	TPS3 09	TPS3 11	TPS3 12	TPS3 15		TPS3L 12	TPS3L 15
Per Phase Surge Current	WHEELD STATE OF THE STATE OF TH				M	Per Phase Surge Current		N ===
50kA						150kA		
100kA						300kA		
150kA						450kA		
200kA						600kA		
250kA						900kA		
300kA								
400kA								
500kA								
600kA								
800kA								
1000kA								

O

Selection

SOLID Protection

Either at home or in the work place, nearly every electrical load is electronic infused. With today's power quality being the same as it was 50 years ago, equipment is more susceptible to surge damage and/or disruption generated by normal electrical distribution interactions. Places where lightning activity is minimal are now experiencing more electronic failures due to surges generated by the day-to-day operations of equipment like wash-

ers and dryers, copiers, chillers, etc. Just a few years ago, designers never gave thought to incorporating surge protection into their designs. They are now reconsidering this practice. Government studies suggest that the most efficient way to protect electrical systems from surges is through the installation and application of hardwired SPDs at key points throughout the distribution system.

To ensure complete electrical system surge protection, Siemens recommends implementing a "SOLID" surge protection installation. "SOLID" systems incorporate hardwired SPDs at the incoming electrical service to stop surges originating from the utility service. This is followed by hardwiring additional SPDs at other distribution system surge entry points.

The illustration to the right shows "SOLID" locations that are typically present in a school's electrical sysytem. Each letter from the word "SOLID" stands for the location on the distribution system where surge protection is to be installed. For each location, we list the most common integral or wall mounted specified Siemens TPS3.











Service Entrance

Outside loads like Parking Lot Lighting powered from distribution panels

Lower voltage distribution panels powering computers and other electronics

Individual critical equipment like servers

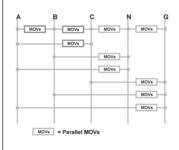
Data, telephone, and coaxial cables



TPS3 03 Type 1 (Type 2 cUL) SPD with $I_n = 20 kA$

When UL 1449 3rd Edition went into effect in 2009, low voltage surge and lightning arrestors became obsolete in the US. This limits the number of CSA compliant suppliers. Arrestors have been replaced by 'Type 1' SPDs, but at the time of this publishing CSA has not recognized 'Type 1' SPDs as a lighting arrestor replacement.

Until 'Type 1' SPDs are recognized, Siemens dual listed the TPS3 03 as a CSA recognized 'Type 2 cUL' listed SPD. We suggest using this SPD as a 'Surge Arrestor Alternative' that must be installed on the load side of the main overcurrent disconnect switch or breaker or at down stream locations.



Discrete or True 10 Mode Style SPDs

For mission critical or high profile applications, a growing number of end users prefer the assurance of discrete or true 10-mode SPDs.

When surges traverse the electrical system via phase to phase conductors, standard SPDs indirectly protect via the line to neutral or line to ground modes of protection. Siemens integral or wall mounted 10-mode SPDs address L-L surges by incorporating directly connected line to line surge protection elements. This style of SPD provides the "Just in Case" assurance mission critical or high profile projects require.

TPS3 External or Wall Mounted SPDs

TPS3 03

TPS3 03 is a UL 1449 3rd Edition, cUL 50 kA Type 1 (Type 2 cUL) compact Surge Protective Device. For cUL applications, the TPS3 03 can be used as a secondary surge or lighting arrestor alternative when installed on the load side of the main disconnect

TPS3 03 Key Features

- UL 1449 3rd Edition, cUL Listed
- Type 1 (Type 2 cUL) Rated SPD
- 50kA Per Phase Surge Current
- 20kA I_n (Most models)
- 200kA SCCR (Most models
- UL 96A Lightning Protection Master Labeling compliant (@ 20kA)
- Every MOV is monitored
- Mounting Chase Nippled, bracket, or DIN RAIL
- Standard compact NEMA 4X polycarbonate enclosure
- Modes of Protection: L-N or L-G and L-L
- Standard Monitoring: LED Indicator
- Dimensions: 3.25" x 3.25" x 3.3" (82.6 mm x 82.6 mm x 83.8 mm)
- Weight: 2 lb. (0.9 kg)
- 2 Year Product Warranty

Available Options:

Dry contacts & audible alarm (option "D")

TPS3 09

TPS3 09 is a UL 1449 3rd Edition, cUL 100kA Type 1 (Type 2 cUL) compact multi-mode surge protective device that can be installed on either the line or load side of the electrical service.

TPS3 09 Key Features

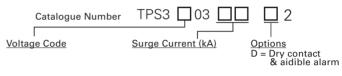
- UL 1449 3rd Edition, cUL Listed
- Type 1 (Type 2 cUL) Rated SPD
- 100kA Per Phase Surge Current
- 20kA I_n (Most models)
- 200kA SCCR (Most models)
- UL 96A Lightning Protection Master Labeling compliant (@ 20kA)
- Every MOV is monitored, including N-G
- Mounting: External or Wall Mounted
- Standard compact NEMA 4X polycarbonate enclosure
- Modes of Protection: L-N, L-G, N-G, and L-L
- Standard Monitoring: LED Indicators
- Dimensions: 8" x 3" x 3" (203 mm x 76 mm x 76 mm)
- Weight: 3 lb. (1.4 kg)
- 10 Year Product Warranty

Available Options:

- Dry contacts & audible alarm (option "D")
- Extended indicator light (option "E")
- Internal mounting in P1, P2 Panels (option "I"), requires
 TPS9IKITP1 or TPS9IKITP2 mounting bracket accessory.



Ordering Information



A = 120/240V, 1%, 3WB = 120/240V, 3%, 4W

C = 120/208V, 3Ø, 4W D = 240V, 3Ø, 3W

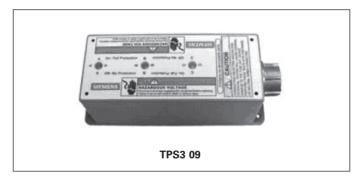
E = 277/480V, 3Ø, 4W F = 480V, 3Ø, 3W G = 600V, 3Ø, 3W

K = 380/220V, 3Ø, 4W L = 600/347V, 3Ø, 4W 05 = 50kA per phase

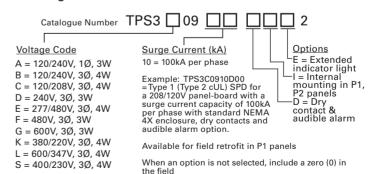
Example -TPS3C0305D = Type 1(Type 2 cUL) SPD for a 208/120V application with a surge current capacity of 50kA per phase, in a standard NEMA 4X enclosure with dry contacts and audible alarm option.

When an option is not selected, include a zero (0) in the field.

Available Accessories: Ordered Separately
RMSIE - Remote monitor



Ordering Information



Available Accessories: 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

TPS3 External or Wall Mounted SPDs

TPS3 11

TPS3 11 is a UL 1449 3rd Edition, cUL Multi-mode Type 1 (Type 2 cUL) Surge Protective Device with a per phase surge current capacity that can be increased to 200kA. In addition, this unit provides UL 1283 EMI/RFI filtering (Sine Wave Tracking) that will condition low energy L-N coupled noise.

Standard monitoring includes protection status Ground Integrity Monitoring or (GIM) diagnostic indicators. Complete protection is intact when the status indicators are illuminated. When protection is lost, the status indicator will extinguish and the red service light will illuminate.

Ground Integrity Monitoring or (GIM) diagnostics monitor the health of the electrical system's neutral to ground bond. If voltage is seen across neutral and ground, the phase indicators will remain illuminated while the red service light begins to flash, alerting the end user that the electrical system grounding needs to be checked. This feature can be remotely monitored when the optional dry contacts are included.

TPS3 11 Key Features

- UL 1449 3rd Edition, cUL and UL 1283 Listed
- Type 1 (Type 2 cUL) Rated SPD
- 100, 150, 200kA Per Phase Surge Current
- 20kA I_n (Most models)
- 200kA SCCR (Most models)
- UL 96A Lightning Protection Master Labeling compliant (@ 20kA)
- Every MOV is monitored, including N-G
- Mounting: External or Wall Mounted
- Standard NEMA 4X polycarbonate enclosure (UL 746C (f1), UL 94-5VA)
- Modes of Protection: L-N, L-G, N-G, and L-L
- Standard Monitoring: LED Indicators and Ground Integrity

Monitoring diagnostics

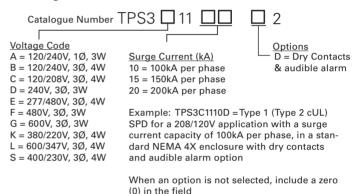
- Wire size: #8 AWG to #10 AWG
- Dimensions: 6" x 6" x 4" (152 mm x 152 mm x 102 mm)
- Weight: 5 lb. (2.27 kg)
- 10 Year Product Warranty

Available Options:

Dry contacts & audible alarm (option "D")



Ordering Information



Available Accessories: Ordered Separately

- RMSIE = Remote monitor
- FMKITC = Flush mount plate

TPS3 External or Wall Mounted SPDs

TPS3 12 and TPS3 L12 (True or Discrete 10-Mode)

TPS3 12 is a UL 1449 3rd Edition, cUL replaceable module, multi-mode Type 1 (Type 2 cUL) Surge Protective Device with a per phase surge current capacity that can be increased to 500kA (TPS3 L12 to 450kA). For mission critical or high profile applications, our TPS3 L12 "True" or "Discrete" 10-mode style SPD provides the "Just in Case" assurance of directly connected L-L MOVs.

Both TPS3 12 and TPS3 L12 include UL 1283 EMI/RFI filtering (Sine Wave Tracking) that will condition low energy L-N coupled noise.

Standard monitoring includes protection status Ground Integrity Monitoring or (GIM) diagnostic indicators. Complete protection is intact when the status indicators are illuminated. When protection is lost, the status indicator will extinguish and the red service light will illuminate.

Ground Integrity Monitoring or (GIM) diagnostics monitor the health of the electrical system's neutral to ground bond. If voltage is seen across neutral and ground, the phase indicators will remain illuminated while the red service light begins to flash, alerting the end user that the electrical system grounding needs to be checked. This feature can be remotely monitored when the optional dry contacts are included.

TPS3 12 and TPS3 L12 Key Features

- UL 1449 3rd Edition, cUL and UL 1283 Listed
- Type 1 (Type 2 cUL) Rated SPD
- TPS3 12: 100 500kA Per Phase Surge Current
- TPS3 L12: 150, 300, 450kA Phase Surge Current
- 20kA In (Most models)
- 200kA SCCR (Most models)
- UL 96A Lightning Protection Master Labeling compliant
- Every MOV is monitored, including N-G
- Mounting: External or Wall Mounted
- Standard NEMA 1/12/3R/04 ANSI 61 steel enclosure
- TPS3 12 Modes of Protection L-N, L-G, N-G, and L-L
- TPS3 L12 Modes of Protection L-N, L-G, N-G, and L-L (directly connected L-L elements)
- Standard Monitoring:
 - LED Indicators
 - Ground Integrity Monitoring diagnostics
 - Dry contacts
 - Audible alarm with silence switch and test button
- Wire size: #8 AWG to 1/0
- Dimensions: 12" x 12" x 7" (305 mm x 305 mm x 178 mm)*
- Weight: 20 lb. (9.07 kg)*
- 10 Year Product Warranty

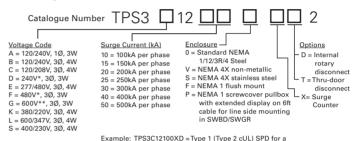
*Other NEMA ratings may increase enclosure size and weight

Available Options:

- Internal rotary disconnect
- Thru-door disconnect
- Surge counter



Ordering Information



208/120V application with a surge current capacity of 100kA per phase, in a standard NEMA 1/12/3R/4 enclosure with a surge counter and internal rotary disconnect option

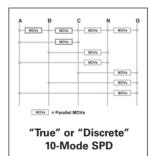
When an option is not selected, include a zero (0) in the field

Available Accessories: Ordered Separately

RMSIE = Remote monitor

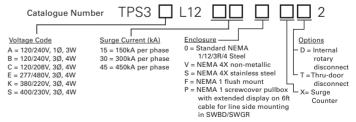
Notes:
* Not available in 500kA

** Available in 100kA, 150kA, 200kA, 250kA only





Ordering Information



Example: TPS3C12100XD =Type 1 (Type 2 cUL) SPD for a 208/120V application with a surge current capacity of 100kA per phase, in a standard NEMA 1/12/3R/4 enclosure with a surge counter and internal rotary disconnect option

When an option is not selected, include a zero (0) in the field

Available Accessories: Ordered Separately

TPS3 External or Wall Mounted SPDs

TPS3 15 and TPS3 L15 (True or Discrete 10-Mode)

TPS3 15 is a UL 1449 3rd Edition, cUL dual replaceable module, multi-mode Type 1 (Type 2 cUL) Surge Protective Device with a per phase surge current capacity that can be increased to 1000kA (TPS3 L15 to 900kA). For mission critical or high profile applications, our TPS3 L15 "True" or "Discrete" 10-mode style SPD provides the "Just in Case" assurance of directly connected L-L MOVs.

Both TPS3 15 and TPS3 L15 include UL 1283 EMI/RFI filtering (Sine Wave Tracking) that will condition low energy LN coupled noise.

Standard monitoring includes protection status Ground Integrity Monitoring or (GIM) diagnostic indicators. Complete protection is intact when the status indicators are illuminated. When protection is lost, the status indicator will extinguish and the red service light will illuminate.

Ground Integrity Monitoring or (GIM) diagnostics monitor the health of the electrical system's neutral to ground bond. If voltage is seen across neutral and ground, the phase indicators will remain illuminated while the red service light begins to flash, alerting the end user that the electrical system grounding needs to be checked. This feature can be remotely monitored when the optional dry contacts are included.

TPS3 15 and TPS3 L15 Key Features

- UL 1449 3rd Edition, cUL and UL 1283 Listed
- Type 1 (Type 2 cUL) Rated SPD
- TPS3 15: 600 1000kA Per Phase Surge Current (most models)
- TPS3 L15: 600 and 900kA Phase Surge Current
- 20kA I_n (most models)
- 200kA SCCR (most models)
- UL 96A Lightning Protection Master Labeling compliant (@ 20kA)
- Every MOV is monitored, including N-G
- Mounting: External or Wall Mounted
- Standard NEMA 1/12/3R/04 ANSI 61 steel enclosure
- TPS3 15 Modes of Protection L-N, L-G, N-G, and L-L
- TPS3 L15 Modes of Protection L-N, L-G, N-G, and L-L (directly connected L-L elements)
- Internal rotary disconnect switch included
- Standard Monitoring:
 - LED Indicators
 - Ground Integrity Monitoring diagnostics
 - Dry contacts
 - Audible alarm with silence switch and test button
- Wire size: #8 AWG to 1/0
- Dimensions: 20" x 20" x 7" (508 mm x 508 mm x 178 mm)
- Weight: 64 lb. (29 kg) *
- 10 Year Product Warranty

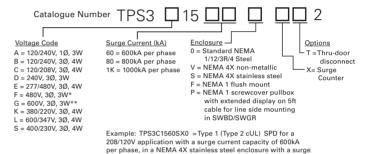
*Other NEMA ratings may increase enclosure size and weight

Available Options:

- Thru-door disconnect
- Surge counter



Ordering Information

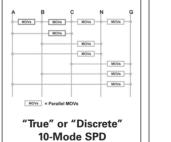


counter option and standard disconnect switch

When an option is not selected, include a zero (0) in the field

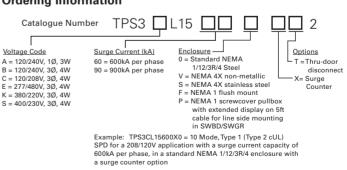
Available Accessories: Ordered Separately
RMSIE = Remote monitor

- * 600kA or 800kA only
- ** 400kA or 500kA only





Ordering Information



When an option is not selected, include a zero (0) in the field

Available Accessories: Ordered Separately
RMSIE = Remote monitor

Power Service Entrance Surge Protection

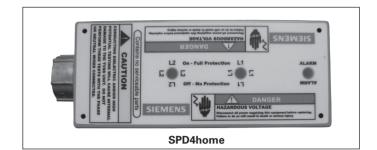
SPD4home

- cUL Listed
- Rated for single phase panels up to 400 amps
- Installation Flexibility
- LED Indicators
- Audible alarm
- Ground Integrity Monitoring (GIM) circuit
- 10 year product warranty*
- * Contact Siemens at 1-888-333-3545 for warranty terms and conditions.

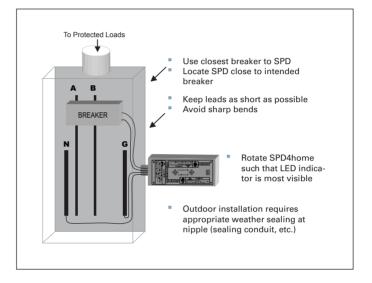
Siemens SPD4home stops power surges from entering your home when installed at the main incoming service loadcenter and connected via a 20A breaker. An additional power quality feature we include within this unit is the Ground Integrity Monitoring circuit, which monitors the health of the electrical system's neutral to ground bond.

Surge Type	Catalogue Number
SPD	SPD4home

AC Surge Protection	
Inominal (I _n) Rating	5kA
SPD Type Rating	Type 2
Thermal Fusing	Yes
Single Current Rating per Phase	40kA
Line Voltage	120/240 1 Phase 50/60 Hz
UL 1449 3rd Edition VPR	700V
MCOV	150V
Response Time	<1 nanosecond
NEMA 4X Enclosure	Standard
UL/cUL Listings	1449 SPD
Product Warranty	10 years



Selection



Selection

Surge Protection Devices (SPD)

Telephone Service Entrance Surge Protection

SPD4tel & SPD4telkit

- cUL listed
- Hardwired Telephone/Modem/Fax/DSL protection
- Exceptionally fast response time
- Low insertion loss
- Available with or without enclosure
- 5 Year product warranty*
- * Contact Siemens at 1-888-333-3545 for warranty terms and conditions.

SPD4tel is a 2-pair hardwired telephone service entrance surge protector designed to stop surges from entering your home via your incoming telephone service. The SPD4tel is designed for indoor applications or can be mounted outside when housed within the weatherproof SPD4telkit.

When combined with the SPD4home and SPD4coax, all primary surge entries into the home providing comprehensive whole house protection.





AC Surge Protection	
Catastrophic Surge Circuit	Yes
Spike Capacity	200 Amps
Let Through Voltage	<270V
Overcurrent Protection	Yes
ResponseTime	<1 nanosecond
Environmentally Sealed	Yes
UL/cUL Listings	497A
Meets Telcordia (formallly Bellcore) GR-974-CORE Requirements for Telecommunications Line rotectors	Yes
Product Warranty	5 years

Surge Type	Catalog Number
Telco	SPD4tel
Telco	SPD4telkit

Coaxial Service Entrance Surge Protection

SPD4coax

- cUL listed
- Rated for CATV, DSS, TV, VCR, and Cable Modem
- Easy to install
- Standard Female to Female F connector
- Low insertion loss
- Automatic recovery
- 5 Year product warranty*
- * Contact Siemens at 1-888-333-3545 for warranty terms and conditions...

SPD4coax is a coaxial service entrance surge protector designed to stop surges from entering your home via your incoming coax TV service. SPD4coax includes a section of coaxial cable with female to female splice for line side application.

When combined with the SPD4home and SPD4tel, all primary surge entries into the home providing comprehensive whole house protection.



AC Surge Protection		
Frequency Range	DC thru 1.5 GHz	
Catastrophic Surge Circuit	Yes	
Spike Capacity	5000 Amps, 8/20 μSec	
Impedance	75 Ohms	
Overcurrent Protection	Yes	
Return Loss	30dB @ 1 GHz	
Insertion Loss	<0.1dB	
UL/cUL Listings	497B	
Meets IEEE C62.41.1 Requirements	Yes	
Product Warranty	5 Years	

Surge Type	Catalog Number
Coaxial	SPD4coax