



Your problem: Power-related problems cost U.S. companies more than \$80 billion dollars a year. Most transients originate from within a facility and nearly 80% of today's overvoltage problems are caused by equipment and power disturbances within the plant. These inner-facility transients are caused, for example, by light load panels switching on and off, motors starting and stopping, and close conductor proximity. Less than 20% of the transient problems originate outside the facility due to lightning strikes, utility grid switching, switching capacitor banks, and electrical accidents.

Our solution: You need fail-safe surge suppression, and the reliability and cost savings of Mersen's Surge-Trap® Surge Protective Devices with TPMOV® Technology inside. Surge-Trap SPDs provide a compact, space saving solution. Plus, unlike other SPDs on the market, they do not require additional overcurrent protection, thus offering reduced installation costs.

Want more information fast? For more technical or application-specific information, please call our overvoltage protection experts at 978-248-8914 or visit our website at mersen.com.

Surge Protection

FAIL-SAFE OVERVOLTAGE PROTECTION IN A FULL RANGE OF OPTIONS

- Surge-Trap® STZ Series SU 2
- Surge-Trap® STXT Series . . . SU 5
- Surge-Trap® STXP Series . . . SU 7
- Surge-Trap® STXR Series . . . SU 9
- Surge-Trap® STXH Series . . . SU 11
- Surge-Trap® STLC Series . . . SU 13
- Surge-Trap® Pluggable STP-75 Series SU 15
- Surge-Trap® Pluggable STP-50 Series SU 18
- Surge-Trap® Monobloc ST Series SU 21
- Surge-Trap® STPT2-40k-PV Series SU 24
- TPMOV® (Thermally Protected MOV). SU 26
- 25TPMOV® (Thermally Protected MOV). SU 28
- VSP MOV Protector Fuse. . SU 30
- Surge-Rated Disconnect Switch. SU 32



Surge-Trap[®] STZ Series

Surge Protective Device

SURGE PROTECTION

PANEL MOUNT SPD FOR UL 1449 TYPE 1 AND 2 APPLICATIONS



The Surge-Trap Type 1 STZ Series is Mersen's premium-featured surge option to be installed at service entrance locations and for protection of the most critical loads. Designed with industry leading Mersen TMOV[®] Technology, the STZ series is ideal for industrial and commercial environments. Does not require additional overcurrent protection. The STZ series has mounting options (internal and external/in enclosure) suitable for both new construction and retrofit applications.

Technical Data Overview	
Surge Current Rating (I_{max})	100, 150, 200, 300, 450kA ⁽¹⁾
System Voltage	120VAC-600VAC
Nominal discharge current (In) (8x20 μs)	20kA
Short Circuit Current Rating (SCCR)	200kA
Nominal power frequency	50 Hz or 60 Hz
Response Time	Less than 1 nanosecond (one per phase)
Mounting	- Externally Mounted Panel - Internally Mounted for Panel integration
Enclosure Options	NEMA 1 / 12 / 3R / 4 / 4X Stainless Steel
EMI/RFI Filter	Up to -50dB from 10kHz to 100MHz
Wiring	Wire Lugs for 6-10 AWG copper
Flammability	UL94-5VA
Operating & Storage Temperature	- 40°F (40°C) to + 185°F (85°C)
Visual Status Indicator LED	Green = 67 to 100% Life Yellow = 34 to 66% Life Red = 0 to 33% Life
Remote Status Indicator	Form C Dry Contacts
[1] 450kA Surge Capacity not available for 380Y, 480D, and 600Y voltage configurations.	

FEATURES/BENEFITS

- The field-replaceable SPD module mounts in any orientation to reduce lead length and optimize performance
- Standard features include LED phase loss indication, EMI/RFI filter, surge counter, dry contacts and audible alarm with silence button
- Optional disconnect switch
- Up to 10 modes of protection
- 15-year warranty

APPLICATIONS

- Service entrance locations
- OEM's Automatic Transfer Switch panel integration
- Switchboards
- Data centers
- Any critical application that requires a high level of protection

APPROVALS/STANDARDS

- ANSI/UL 1449 5th Edition, Type 1 SPD, File E210793
- CSA C22.2, Type 1 SPD
- UL96A Lightning Protection
- RoHS Compliant



PART NUMBER SELECTOR

Don't see what you need? Please contact Technical Services.

STZ Series	480Y Voltage and System Configuration	30 Surge Capacity	B Standard Features	1 Enclosure	T Disconnect Switch
STZ	240S: 240/120V Split 208Y: 208/120V WYE 380Y: 380/220V WYE 480Y: 480/277V WYE 240D: 240V DELTA 480D: 480V DELTA & HRG WYE 600Y: 600/347V WYE	10: 100kA 15: 150kA 20: 200kA 30: 300kA 45: 450kA ^[1]	LED Status Indicators Phase Loss Indication Audible Alarm Form C Dry Contacts EMI/RFI Filter Surge Counter	1: NEMA 1/12/3R/4 X: NEMA 4X Stainless Steel Q: Field-replaceable module R: Without enclosure for internal mounting	BLANK: None T: UL 98 switch with door mounted handle on enclosed units ^[2] U: UL 98 switch with shaft and door mountable switch handle for internally mounted units

Example Part Number:

STZ 480Y 20 B 1 T

[1] 450kA Surge Capacity not available for 380Y, 480D, and 600Y voltage configurations.

[2] The enclosure dimensions for units with the disconnect switch option are larger than those without. Please refer to the dimensions on the next page.

[3] For door mounting HMI display, Options R and RU additional communication cable (5 ft.) is provided.

Option "R" for Internal Mounting^[3]



Option "1" for External Mounting

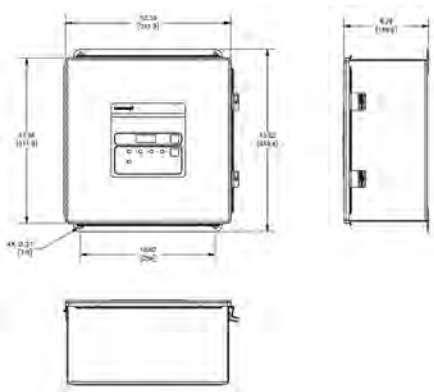


VOLTAGE SPECIFICATIONS

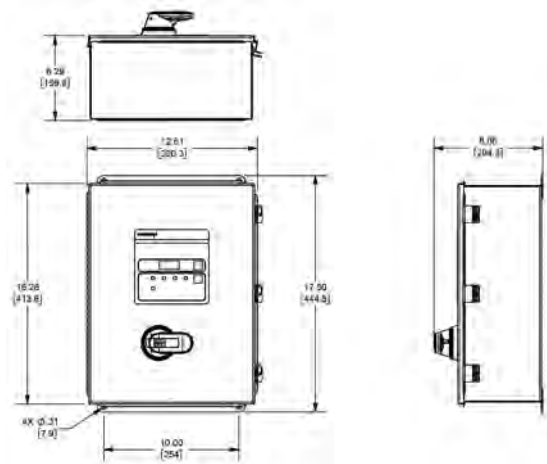
Part Number	System Voltage and Configuration	Maximum Continuous Operating Voltage (MCOV, U _c)				ANSI/UL 1449 5th Edition voltage protection ratings - VPR							
		L-N	L-G	L-L	N-G	Without Integral Switch				With Integral Switch [U]			
		L-N	L-G	L-L	N-G	L-N	L-G	L-L	N-G	L-N	L-G	L-L	N-G
STZ240S__B [1 or X]__	240/120V Split Phase	150	150	276	150	800	800	1200	700	800	900	1200	800
STZ208Y__B [1 or X]__	208/120V 3-Phase WYE	150	150	239	150	800	800	1200	700	800	900	1200	800
STZ480Y__B [1 or X]__	480/277V 3-Phase WYE	320	320	552	150	1500	1200	2000	700	1500	1500	2000	800
STZ240D__B [1 or X]__	240V 3-Phase DELTA	-	320	320	-	-	1200	2000	-	-	1200	2000	-
STZ380Y__B [Q or R]__	380/220 3-Phase WYE	552	320	320	150	2000	1200	1200	600	2000	1500	1500	800
STZ380Y__B [1 or X]__	380/220 3-Phase WYE	552	320	320	150	2000	1500	1200	700	2000	1500	1500	800
STZ480D__B [1 or X]__	480V 3-Phase DELTA & HRG WYE	690	420	420	150	2500	1500	1500	600	2500	1500	1500	800
STZ240S__B [Q or R]__	240/120V Split Phase	690	420	420	150	2500	1500	1500	700	2500	1500	1500	800
STZ208Y__B [Q or R]__	208/120V 3-Phase WYE	150	150	276	150	700	700	1000	600	800	900	1200	800
STZ480Y__B [Q or R]__	480/277V 3-Phase WYE	320	320	552	150	1200	1200	2000	600	1500	1500	2000	800
STZ240D__B [Q or R]__	240V 3-Phase DELTA	-	320	320	-	-	1200	2000	-	-	1200	2500	-
STZ480D__B [Q or R]__	480V 3-Phase DELTA & HRG WYE	-	552	552	-	-	1800	4000	-	-	1800	4000	-
STZ600Y__B [Q or R]__	600/347 3-Phase WYE	690	420	420	150	2500	1500	1500	600	2500	1500	1500	800
STZ600Y__B [1 or X]__	600/347 3-Phase WYE	690	420	420	150	2500	1500	1500	700	2500	1500	1500	800

DIMENSIONS AND MOUNTING CONFIGURATIONS

ENCLOSURE OPTIONS 1 or X - External Mounting

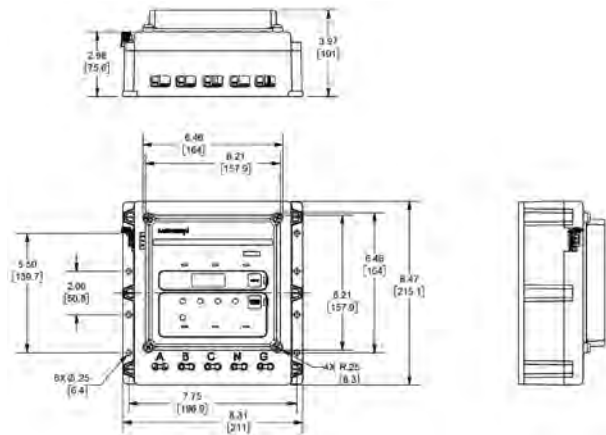


Without Disconnect Switch

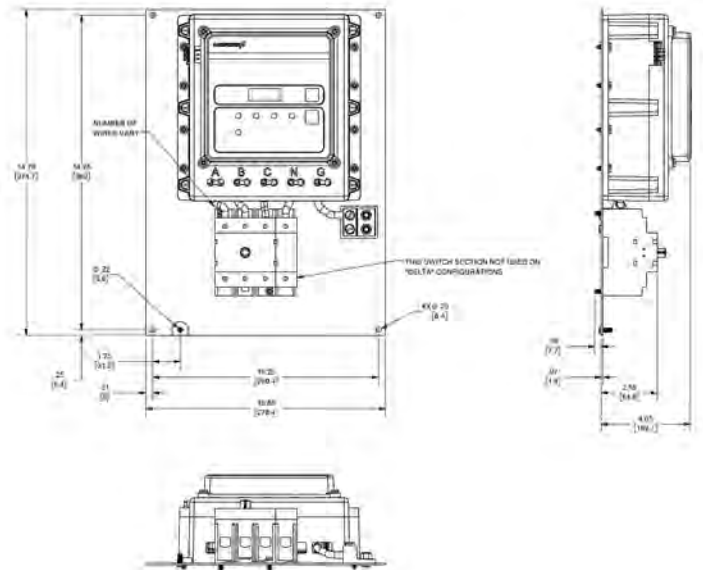


With Disconnect Switch

ENCLOSURE OPTIONS R - Internal Mounting

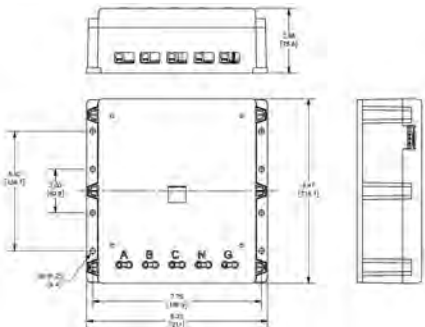


Without Disconnect Switch



With Disconnect Switch

ENCLOSURE OPTIONS Q - Field-replaceable Module



Surge-Trap[®] STXT Series

Surge Protective Device

SURGE PROTECTION

PANEL MOUNT SPD FOR UL 1449 TYPE 1 AND 2 APPLICATIONS



The Surge-Trap Type 1 STXT Series has standard EMI/RFI Filtering, LED indication on each phase, optional remote indication, and surge capacities up to 200kA. The STXT features TPMOV[®] technology inside, making it the safest product available, and does not require additional overcurrent protection. With line or load side installation flexibility, this unit is a great fit from the service entrance all the way down to each distribution and/or branch panel.

Technical Data Overview	
Surge Current Rating (I_{max})	100kA and 200kA - Per Phase
System Voltage	120VAC-600VAC
Nominal discharge current ($I_n - 8 \times 20 \mu s$)	20kA
Short Circuit Current Rating (SCCR)	200kA
Nominal power frequency	50 Hz or 60 Hz
Response Time	Less than 1 nanosecond (one per phase)
Mounting	Female 3/4" – 14 threaded hub Mounting feet with 0.25" diameter holes
Wiring	Wire Lugs for 8 AWG copper
Enclosure	NEMA 4X Non-metallic
Flammability	UL 94-5VA
Operating & Storage Temperature	- 40°F [40°C] to + 185°F [85°C]
Relative Humidity Range	0 to 95% non-condensing
Visual Status Indicator	LED per Phase Green = Functional / OUT = Replace
Optional Status Indicator	Form C Dry Contact and Audible Alarm

FEATURES/BENEFITS

- Designed with industry leading Mersen TPMOV technology
- Standard features include LED phase loss indication and EMI/RFI filter Up to -50dB from 10kHz to 100MHz
- Optional Form C dry contacts and audible alarm with silence button
- Mounting hub and mounting feet for installation flexibility
- Up to 10 modes of protection
- 10-year manufacturer's warranty

APPLICATIONS

- Service entrance at low to medium risk exposure level
- Commercial and industrial distribution panels
- Control branch panels
- Any critical application that requires a high to medium level of protection

APPROVALS/STANDARDS

- ANSI/UL 1449 5th Edition, Type 1 SPD, File E210793
- CSA C22.2, Type 1 SPD
- ANSI/IEEE C62.41.1, C62.41.2, C62.45
- UL96A Lightning Protection
- RoHS Compliant



CATALOG NUMBERS AND ELECTRICAL CHARACTERISTICS

Catalog Number (includes suffixes*)	System Voltage and Configuration	I _n	Maximum Continuous Operating Voltage (MCOV, U _c)				Voltage Protection Rating (VPR) (UL 1449, 6kV, 3kA)			
			L-N	L-G	L-L	N-G	L-N	L-G	L-L	N-G
STXT120P20	120V Single Phase	20kA	150	150	-	150	700	700	-	700
STXT240P20	240V Single Phase	20kA	320	320	-	150	1200	1200	-	700
STXT240S20	240/120V Split Phase	20kA	150	150	300	150	700	700	1000	700
STXT480S20	480/240V Split Phase	20kA	320	320	640	150	1200	1200	2000	700
STXT208Y20	208/120V 3-Phase WYE	20kA	150	150	300	150	700	700	1000	700
STXT380Y20	380/220V 3-Phase WYE	20kA	320	320	640	150	1200	1200	2000	700
STXT480Y20	480/277V 3-Phase WYE	20kA	320	320	640	150	1200	1200	2000	700
STXT600Y20	600/347V 3-Phase WYE	20kA	420	420	840	275	1500	1500	2500	1200
STXT240D20	240V 3-Phase DELTA	20kA	-	320	640	-	-	1200	2000	-
STXT480D20	480V 3-Phase DELTA & HRG WYE	20kA	-	550	1100	-	-	1800	3000	-
STXT600D10	600V 3-Phase DELTA	20kA	-	695	840	-	-	2500	2500	-
STXT480B20	480V B Corner Ground DELTA	20kA	-	550	1100	-	-	1800	4000	-
High-Leg Delta Configuration			L-N/HL-N	L-G/HL-G	L-L/HL-L	N-G	L-N/HL-N	L-G/HL-G	L-L/HL-L	N-G
STXT240H20	240/120V High-Leg DELTA	20kA	150/275	150/275	300/425	150	700/1200	700/1200	1000/2000	700
STXT480H20	480/240V High-Leg DELTA	20kA	320/550	320/550	640/870	320	1200/1800	1200/1800	2000/2500	1200

For 100kA Surge Capacity models, in the part number substitute "10" for "20" Example: STXT208Y10

OPTIONAL FEATURES

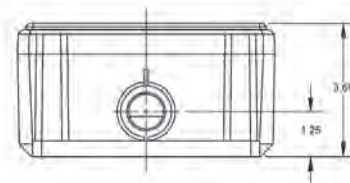
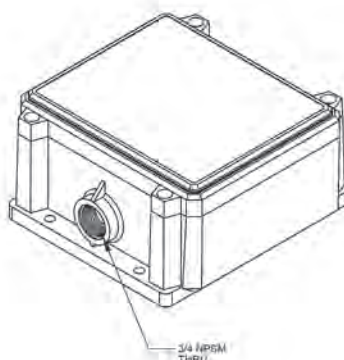
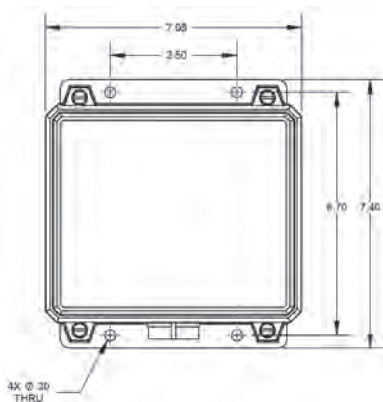
*Audible Alarm and Dry Contact:

Add Suffix "A" at the end of the part number for Audible Alarm and Dry Contact. Alarm sounds when any protection is lost. Example: STXT208Y20A

- Audible Alarm: Alarm sounds when any protection is lost
- Dry Contact Specification:
 - 125VAC, 1A Resistive
 - 30VDC, 2A General Purpose
 - COM, Common
 - NO, Normally Open NC
 - NC, Normally Closed



DIMENSIONS



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Surge-Trap[®] STXP Series

Surge Protective Device

SURGE PROTECTION

PANEL MOUNT SPD FOR UL 1449 TYPE 1 AND 2 APPLICATIONS



The Surge-Trap Type 1 STXP Series offers a balance of redundant surge protection in a compact form factor with flexible installation options. Catalog numbers in this series can be panel mounted or side mounted, and have a separate optional flush mount cover. Additionally, the STXP series has options for remote indication and comes standard with LED indication on each phase. The STXP series incorporates TPMOV[®] technology for maximum safety and does not require additional overcurrent protection. Suitable for installation on both the line and load side of a panel, the STXP is ideal for everything from service entrances to machine-specific control panels.

Technical Data Overview	
Surge Current Rating (I_{max})	100kA – Per Phase
System Voltage	120VAC - 600VAC
Nominal discharge current (I_n - 8x20 μ s)	20kA
Short Circuit Current Rating (SCCR)	200kA
Nominal power frequency	50 Hz or 60 Hz
Response Time	Less than 1 nanosecond (one per phase)
Mounting	Female Threaded Mounting Hub 3/4" – 14 Includes sealing locking washer. Mounting feet with 0.125" diameter holes.
Wiring	Pre-wired 36" (1m) 10AWG
Enclosure	NEMA 4X Non-metallic
Flammability	UL 94-5VA
Operating & Storage Temperature	- 40°F [40°C] to + 185°F [85°C]
Relative Humidity Range	0 to 95% non-condensing
Visual Status Indicator	LED per Phase Green = Functional / OUT = Replace

FEATURES/BENEFITS

- Designed with industry leading Mersen TPMOV technology
- Fits 3/4" knockouts with 36" cable leads for easy installation
- Up to 10 modes of protection
- 10-year manufacturer's warranty

APPLICATIONS

- Service entrance at low to medium risk exposure level
- Commercial and Industrial Distribution Panels
- Control Panels

APPROVALS/STANDARDS

- ANSI/UL 1449 5th Edition, Type 1 SPD, File E210793
- CSA C22.2, Type 1 SPD
- ANSI/IEEE C62.41.1, C62.41.2, C62.45
- UL96A Lightning Protection
- RoHS Compliant



CATALOG NUMBERS AND ELECTRICAL CHARACTERISTICS

Catalog Number (includes suffixes*)	System Voltage and Configuration	I _n	Maximum Continuous Operating Voltage (MCOV)				Voltage Protection Rating (VPR)			
			L-N	L-G	L-L	N-G*	L-N	L-G	L-L	N-G**
STXP120P10	120V Single Phase	20kA	150	150	-	150	700	700	-	600
STXP240P10	240V Single Phase	20kA	320	320	-	150	1200	1200	-	700
STXP240S10	240/120V Split Phase	20kA	150	150	300	150	700	700	1000	600
STXP480S10	480/240V Split Phase	20kA	320	320	640	150	1200	1200	2000	600
STXP208Y10	208/120V 3-Phase WYE	20kA	150	150	300	150	700	700	1000	600
STXP380Y10	380/220V 3-Phase WYE	20kA	320	320	640	150	1200	1200	2000	600
STXP480Y10	480/277V 3-Phase WYE	20kA	320	320	640	150	1200	1200	2000	600
STXP600Y10	600/347V 3-Phase WYE	20kA	420	420	840	275	1200	1500	2000	1000
STXP240D10	240V 3-Phase DELTA	20kA	-	320	640	-	-	1200	2000	-
STXP480D10	480V 3-Phase DELTA & HRG WYE	20kA	-	550	1100	-	-	1800	3000	-
STXP600D05 (50kA)	600V 3-Phase DELTA	20kA	-	690	840	-	-	2000	2500	-
STXP480B10	480V B Corner Ground DELTA	20kA	-	690	840	-	-	2000	2500	-
High - Leg Delta Configuration			L-N / HL-N	L-G / HL-G	L-L / HL-L	N-G	L-N / HL-N	L-G / HL-G	L-L / HL-L	N-G
STXP240H10	240/120V High-Leg DELTA	20kA	150/320	150/320	300/470	150	600/1200	700/1200	1000/1000	500
STXP480H05 (50kA)	480/240V High-Leg DELTA	20kA	320/550	320/550	640/870	320	1200/1800	1200/1800	1800/2500	1000

*Suffix "N" at the end of the part number for N-G protection. N-G protection is suggested downstream of N-G bonding when the unit is installed > 10' (3m) from service entrance or transformer. Without "N" option for installation of SPD at or near service entrance or transformer < 10' (3m) (N-G Bonded does not require N-G protection).

OPTIONAL FEATURES

**Form C Dry Contact and Audible Alarm

Adding the suffix "A" at the end of the part number, will include Form C Dry Contacts and Audible Alarm.

- Audible Alarm: Alarm sounds when any protection is lost
- Dry Contact Specification:
 - 125VAC, 1A Resistive
 - 30VDC, 2A General Purpose
 - Prewired 36" - 18AWG cable

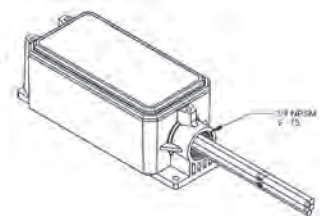
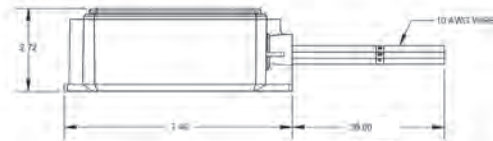
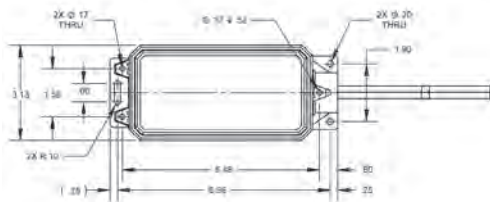


Flush-Mount Plate

Part Number STXPFMK: STXP Flush Mount Kit. Includes (1) mounting plate and (3) mounting screws for connecting plate to the STXP housing. Screws for mounting plate to the wall are not supplied. Plate outer dimensions are 4.5"x8.5".

DIMENSIONS

3/4" - 14 Fitting and Locknut not supplied



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Surge-Trap® STXR Series

Surge Protective Device

SURGE PROTECTION

PANEL MOUNT SPD FOR UL 1449 TYPE 1 AND 2 APPLICATIONS



The Surge-Trap STXR Series UL listed Type 1 SPD, a leading choice in the STX series, meets the UL1449 5th Edition standards and is an excellent replacement for outdated surge arrestors. This series incorporates TMOV® technology, ensuring it is one of the safest options available. Does not require additional overcurrent protection. The STXR series boasts a compact design and offers flexibility for line or load installation, making it ideal for both branch panel and individual equipment protection.

Technical Data Overview	
Surge Current Rating (I_{max})	50kA – Per phase & per mode
System Voltage	120VAC - 600VAC
Nominal discharge current (I_n) (8x20 μ s)	20kA
Short Circuit Current Rating (SCCR)	200kA
Nominal power frequency	50 Hz or 60 Hz
Mounting	Fits 3/4" knockouts with 36" leads for easy installation
Response Time	Less than 1 nanosecond (one per phase)
Wiring	Pre-wired 36" (1m) 10AWG
Enclosure	NEMA 4X Non-metallic
Flammability	UL94-5VA
Operating & Storage Temperature	- 40°F (40°C) to + 185°F (85°C)
Relative Humidity Range	0 to 95% non-condensing
Visual Status Indicator	LED Green = Functional / OUT = Replace

FEATURES/BENEFITS

- Designed with industry leading Mersen TMOV technology
- Optional mounting bracket for surface mount applications
- NEMA 4X enclosure for outdoor or indoor use
- Fits 3/4" knockouts with 36" leads for easy installation
- Up to 10 modes of protection (L-N, L-L, L-G optional, N-G optional)
- Bright LED status indicator, visible from side profile through clear cover
- 5-year manufacturer's warranty

APPLICATIONS

- Branch panel and/or individual equipment protection
- Commercial and industrial distribution panels
- Control panels

APPROVALS/STANDARDS

- ANSI/UL 1449 5th Edition, Type 1 SPD, File E210793
- CSA C22.2, Type 1 SPD
- UL96A Lightning Protection
- RoHS Compliant



CATALOG NUMBERS AND ELECTRICAL CHARACTERISTICS

Catalog Number (includes suffixes*)	System Voltage and Configuration	I _n	Maximum Continuous Operating Voltage (MCOV, U _c)				Voltage Protection Rating (VPR) (UL 1449, 6kV, 3kA)			
			L-N	L-G	L-L	N-G*	L-N	L-G	L-L	N-G**
STXR120P05	120V Single Phase	20kA	150	300**	-	150	700	1200**	-	600
STXR240P05	240V Single Phase	20kA	320	640**	-	320	1200	1800**	-	1000
STXR240S05	240/120V Split Phase	20kA	150	300**	300	150	700	1200**	1200	600
STXR480S05	480/240V Split Phase	20kA	320	640**	640	320	1200	1800**	2000	1000
STXR208Y05	208/120V 3-Phase WYE	20kA	150	300**	300	150	700	1200**	1200	600
STXR380Y05	380/220V 3-Phase WYE	20kA	320	640**	640	320	1200	1800**	2000	1000
STXR480Y05	480/277V 3-Phase WYE	20kA	320	470**	640	150	1200	1800**	2000	700
STXR600Y05	600/347V 3-Phase WYE	20kA	420	690**	840	270	1500	2500**	2500	1000
STXR240D05	240V 3-Phase DELTA	20kA	-	320	640	-	-	1200	2000	-
STXR480D05	480V 3-Phase DELTA & HRG WYE	10kA	-	550	1100	-	-	1800	3000	-
STXR600D05	600V 3-Phase DELTA	20kA	-	690	840	-	-	2000	2500	-
			L-N/ HL-N	L-G/ HL-G	L-L/HL-L	N-G*	L-N/ HL-N	L-G/ HL-G	L-L/HL-L	N-G**
STXR240H05	240/120V High-Leg DELTA	20kA	150/270	300/420**	300/420	150	700/1.2k	1.2k/1.2k**	2k/2k	600
STXR480H05	480/240V High-Leg DELTA	10kA	320/550	320/550**	640/870	320	1.2/1.8k	1.2k/1.8k**	2k/2.5k	1000

** MCOV and VPR only applicable for models with options N-G protection - see below.

*AVAILABLE OPTIONS

N-G protection: Add Suffix "N" at the end of the part number for N-G protection. Example: STXR208Y05N.

- N-G protection is suggested downstream of N-G bond when the unit is installed > 10 ft. (3 m) from service entrance or transformer.
- Without "N" option for installation of SPD at or near service entrance or transformer < 10 ft. (3 m) (N-G Bonded does not require N-G protection).

Audible Alarm and Dry Contact: Add Suffix "A" at the end of the part number for Audible Alarm and Dry Contact. Example: STXR208Y05A.

For Both Options: Add the suffix "AN" at the end of the part number. Example: STXR208Y05AN

- Alarm sounds when any protection is lost.
- Form C Dry Contact (Pre-wired 36" 18AWG).
125VAC, 1A Resistive and 30VDC, 2A General Purpose.

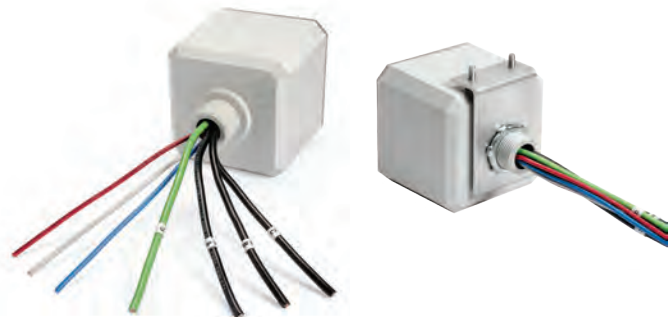
Red = Normally Closed

Gray = Common

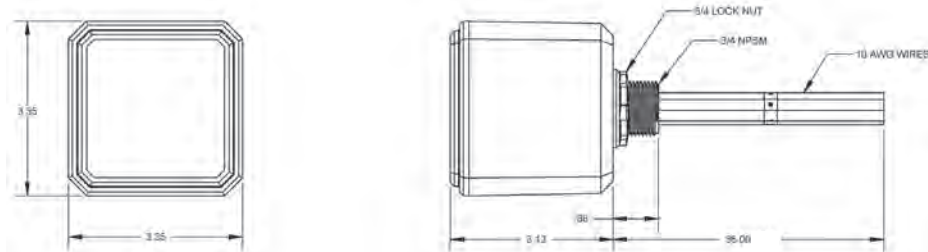
Blue = Normally Open

ACCESSORIES

Catalog Number	Accessory Description
STXRGBK	STXR Mounting Bracket Kit. Includes (1) 90-degree bracket and (2) mounting screws



DIMENSIONS



Surge-Trap[®] STXH Series

Surge Protective Device

SURGE PROTECTION

PANEL MOUNT SPD FOR UL 1449 TYPE 1 AND 2 APPLICATIONS



Surge-Trap STXH is listed UL Type 1 and fully compliant with UL1449 5th Edition, suitable for any 120/240VAC split phase application. Equipped with TPMOV[®] technology, stands out as the safest option in its class. Compact design, combined with superior performance and reliability, makes it particularly suited for HVAC systems and direct attachment to air conditioning disconnect switches.

Technical Data Overview	
Surge Current Rating (I_{max})	50kA – Per phase & per mode 75kA – Per phase & per mode
System Voltage	120V Single Phase, 120/240VAC Split Phase
Nominal discharge current (I_n) (8x20 μ s)	20kA
Short Circuit Current Rating (SCCR)	200kA
Nominal power frequency	50 Hz or 60 Hz
Response Time	Less than 1 nanosecond (one per phase)
Mounting	1/2" – 14 threaded hub Includes sealing locking washer
Wiring	Pre-wired 18" 10AWG
Enclosure	NEMA 4X Non-metallic
Flammability	UL94-5VA
Operating & Storage Temperature	– 40°F (40°C) to + 185°F (85°C)
Relative Humidity Range	0 to 95% non-condensing
Visual Status Indicator	LED Green = Functional / OUT = Replace

FEATURES/BENEFITS

- Mersen TPMOV Technology – does not require additional overcurrent protection
- Compact footprint for seamless integration with AC Disconnect Switches
- NEMA 4X enclosure for outdoor or indoor use
- Fits 1/2" knockouts with 18" leads for easy installation
- Up to 3 modes of protection (L-N, L-L, and L-G)
- Bright LED status indicator, visible from side profile through clear cover
- 3-year manufacturer's warranty, plus up to \$25k connected equipment warranty (for details see warranty statement)

APPLICATIONS

- Residential Panels
- HVAC systems
- Pool and Spa equipment

APPROVALS/STANDARDS

- ANSI/UL 1449 5th Edition, Type 1 SPD, File E210793
- CSA C22.2, Type 1 SPD
- ANSI/IEEE C62.41.1, C62.41.2, C62.45
- UL96A Lightning Protection
- RoHS Compliant



CATALOG NUMBERS AND ELECTRICAL CHARACTERISTICS

Catalog Number (includes suffixes*)	System Voltage and Configuration	I _n	Surge Current Rating	Maximum Continuous Operating Voltage (MCOV, U _c)				Voltage Protection Rating (VPR) (UL 1449, 6kV, 3kA)			
				L-N	L-G	L-L	N-G	L-N	L-G	L-L	N-G
STXH120P05	120V Single Phase (2W)	20kA	50kA	180	-	-	-	600	-	-	-
STXH120P05N	120V Single Phase (2W+G)	20kA	50kA	150	300	-	150	600	1200	-	600
STXH240S05	240/120V Split Phase (3W)	20kA	50kA	150	-	300	-	600	-	1200	-
STXH120P07	120V Single Phase (2W)	20kA	75kA	180				600			
STXH120P07N	120V Single Phase (2W+G)	20kA	75kA	180	360		180	600	1000		600
STXH240S07	240/120V Split Phase (3W)	20kA	75kA	180		360		600		1000	

*Suffix "N" at the end of the part number for N-G protection. N-G protection is suggested downstream of N-G bonding when the unit is installed > 10' (3m) from service entrance or transformer. Without "N" option for installation of SPD at or near service entrance or transformer < 10' (3m) (N-G Bonded does not require N-G protection).

LED STATUS INDICATOR



High brightness LED, visible from all angles through the clear cover

MOUNTING CONFIGURATIONS

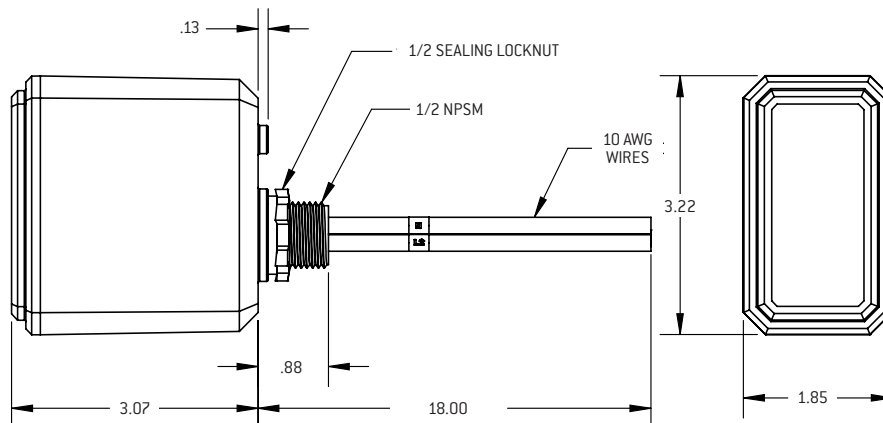


1/2" NPT Mounting Hub



Ideal for Air Conditioning Disconnect Applications

DIMENSIONS



Surge-Trap® STLC Series

Surge Protective Device

POWER LINE SPD - NEMA UL CSA TYPE 1

LOAD CENTER MOUNT FOR UL 1449 TYPE 1 AND 2 APPLICATIONS



Mersen's Surge-Trap® STLC surge protective device adds a critical layer of surge protection for your entire home. The STLC series installs in just minutes and stands out for its versatile design, having been tested to fit a wide range of load centers from various manufacturers. The STLC Series is designed with Mersen's TPMOV® technology to ensure superior safety and reliability. Listed UL 1449 5th Edition Type 1 SPD and satisfies latest NEC requirement for surge protection for residential dwellings.

Technical Data Overview	
Part Number	STLC240S025
Surge Current Rating (per phase and per mode)	25kA
System Voltage	120/240VAC Split Phase
Nominal Discharge Current Rating (I _n)	10kA
Short-Circuit Current Rating (SCCR)	10kA (tested to 100kA)
Nominal power frequency	50 Hz or 60 Hz
Response Time	Less than 1 nanosecond (one per phase)
Status Indicator	LED: ON = Good - OFF = Replace
Maximum Continuous Operating Voltage (MCOV, U _c)	L-N: 150; L-L: 300
Voltage Protection Rating (VPR) [UL 1449, 6kV, 3kA]	L-N: 600; L-L: 1000
Ambient Temperature Rating	-20 ... 65°C

FEATURES/BENEFITS

- Designed with industry leading Mersen TPMOV® technology
- Installs directly into load center bus bar, utilizing any (two) open adjacent breaker slots
- Versatility: fits into most residential load centers with 1" spacings (see next page for compatibility list)
- 2 modes of protection (L-N, L-L)
- 3-year manufacturer's warranty, plus up to \$25k connected equipment warranty

APPLICATIONS

- 120/240VAC residential load centers

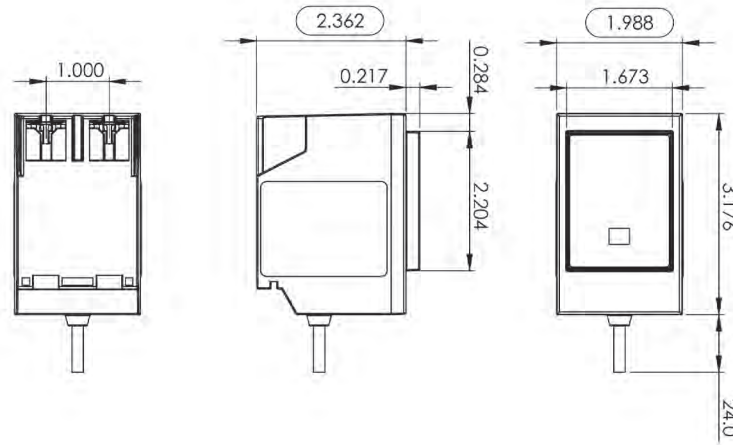
APPROVALS/STANDARDS

- ANSI/UL 1449 5th Edition, Type 1 SPD, File E517916
- RoHS Compliant



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DIMENSIONS



COMPATIBILITY CHART

Brand	Load Center	Circuit Breaker Type
Eaton	BR Series (prefix 1BR or B in the catalog number)	BR215 ... BR250, BR, 2P, 120/240 V AC, 15A ... 50A
Siemens Industry, Inc.	PL Series (prefix P or PW in the catalog number)	Q215 ... Q250, 0P, 2P, 120/240VAC, 15A ... 50A
	ES Series (prefix S or SW in the catalog number)	Q215 ... Q250, 0P, 2P, 120/240VAC, 15A ... 50A
	EQ Series (prefix E in the catalog number)	Q215 ... Q250, 0P, 2P, 120/240VAC, 15A ... 50A
Murray/Siemens Industry, Inc.	LC Series (prefix LC or LW in the catalog number)	MP215 ... MP250, MP, 2P, 120/240VAC, 15A ... 50A
ABB/General Electric	Powermark Gold series (prefix TL, TM or TP in the catalog number)	THQL215 ... THQL250, 2P, 120/240 V AC, 15 ... 50 A
Schneider Electric USA Inc./Square D Co.	Homeline series (prefix HOM in the catalog number)	HOM215 ... HOM250, 2P, 120/ 240 V AC, 15 ... 50 A

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Surge-Trap[®] Pluggable STP-75 Series

Surge Protective Device

SURGE PROTECTION

DIN-RAIL MOUNT PLUGGABLE FOR ANSI/UL 1449 TYPE 1 AND 2 APPLICATIONS



Surge-Trap Pluggable STP-75 Series Surge Protective Device (SPD) is a no-fuse, fail-safe surge suppressor featuring Mersen's TPMOV[®] technology inside – no need for additional overcurrent protection. DIN-rail mountable featuring a fail-safe self-protected design, visual indicator, and a small footprint. A remote indicator provides status to critical control circuitry. High short circuit rating makes it suitable for most industrial control panels.

Technical Data Overview	
Surge Current Rating (I_{max})	75kA
Nominal discharge current (I_n) (8x20 μ s)	10 – 20kA
Short Circuit Current Rating (SCCR)	200kA
Nominal power frequency	50 Hz or 60 Hz
Response Time	Less than 1 nanosecond (one per phase)
Mounting	35mm DIN-Rail
Wire Range	4 - 14AWG Solid / Stranded CU
Torque	35.4 lbs-in
Degree of Protection	IP 20 (finger-safe)
Flammability	UL94 V0
Operating & Storage Temperature	- 40°C to + 85°C
Visual Status Indicator flag	Green = Functional / Red = Replace
Remote Status Indicator	Form C Dry Contacts

FEATURES/BENEFITS

- Designed with industry leading Mersen TPMOV technology
- Easy installation or retrofit
- Reversible chassis allows cable entry from top or bottom
- Replaceable modules with mechanical coding to avoid replacement errors
- 5-year warranty

APPLICATIONS

- Industrial Control Panels
- Water treatment
- Smart grid & LV Metering
- Traffic / ITS applications.
- Intended for use on a wide range of low voltage applications inside appropriate enclosures

APPROVALS/STANDARDS

- ANSI/UL 1449 5th Edition, Open Type 1 SPD Listed, File E210793
- ANSI/IEEE C62.41.1, C62.41.2, C62.45
- CSA C22.2 No. 269 Certified, File 162842
- RoHS Compliant



CATALOG NUMBERS AND ELECTRICAL CHARACTERISTICS

1 Pole - 2 Wires

Catalog Number	Nominal System Voltage (VAC)	I _n (kA)	Surge Current Rating	Maximum Continuous Operating Voltage (MCOV, VAC)				Voltage Protection Rating (VPR, VAC)				Replacement plugs
				L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	
STP120P07M	120 - 1Ø, 2W	20	75 kA	175	-	-	-	600	-	-	-	SP07U175
STP230P07M	240 - 1Ø, 2W	20	75 kA	275	-	-	-	900	-	-	-	SP07U275
STP277P07M	277 - 1Ø, 2W	20	75 kA	320	-	-	-	1000	-	-	-	SP07U320
STP347P07M	347 - 1Ø, 2W	10	75 kA	420	-	-	-	1500	-	-	-	SP07U420

2 Poles - 3 Wires

Catalog Number	Nominal System Voltage (VAC)	I _n (kA)	Surge Current Rating	Maximum Continuous Operating Voltage (MCOV, VAC)				Voltage Protection Rating (VPR, VAC)				Replacement plugs
				L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	
STP240S07M	120/240 - Split Ø, 3W	20	75 kA	175	-	-	350	600	-	-	1200	SP07U175
STP480S07M	240/480 - Split Ø, 3W	20	75 kA	275	-	-	550	900	-	-	1800	SP07U275

3 Poles - 4 Wires

Catalog Number	Nominal System Voltage (VAC)	I _n (kA)	Surge Current Rating	Maximum Continuous Operating Voltage (MCOV, VAC)				Voltage Protection Rating (VPR, VAC)				Replacement plugs
				L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	
STP240D07M	240 - 3Ø Delta, 4W	20	75 kA	-	275	-	550	-	900	-	1800	SP07U275
STP480D07M	480 - 3Ø Delta, 4W	10	75 kA	-	550	-	1100	-	1500	-	3000	SP07U550
STP208Y07M	120/208 - 3Ø Wye, 4W	20	75 kA	175	-	-	350	600	-	-	1200	SP07U175
STP480Y07M	277/480 - 3Ø Wye, 4W	20	75 kA	320	-	-	640	1000	-	-	2000	SP07U320
STP600Y07M	347/600 - 3Ø Wye, 4W	10	75 kA	420	-	-	840	1500	-	-	2500	SP07U420
STP690Y07M	400/690 - 3Ø Wye, 4W	10	75 kA	550	-	-	1100	1500	-	-	3000	SP07U550

4 Poles - 5 Wires

Catalog Number	Nominal System Voltage (VAC)	I _n (kA)	Surge Current Rating	Maximum Continuous Operating Voltage (MCOV, VAC)				Voltage Protection Rating (VPR, VAC)				Replacement plugs	
				L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L		
STP208YN07M	120/208 - 3Ø Wye, 5W	20	75 kA	175	175	175	350	600	1200	600	1200	SP07U175	
STP480YN07M	277/480 - 3Ø Wye, 5W	20	75 kA	320	495	175	640	1000	1500	1000	2000	L1,2,3	SP07U320
												N-G	SP07U175
STP600YN07M	347/600 - 3Ø Wye, 5W	10	75 kA	420	695	275	840	1500	2000	800	2500	L1,2,3	SP07U420
												N-G	SP07U275
STP690YN07M	400/690 - 3Ø Wye, 5W	10	75 kA	550	870	320	1100	1500	2500	1000	3000	L1,2,3	SP07U550
												N-G	SP07U320
STP240HN07M	120/240 - 3Ø High-Leg Delta, 5W	20	75 kA	350	175	450	275	1200	600	1500	800	L1,3	SP07U175
												L2	SP07U275
												N-G	SP07U175
STP480HN07M	240/480 - 3Ø High-Leg Delta, 5W	10	75 kA	550/450	275/175	825/725	550	1500	800/600	2500/200	1500	L1,3	SP07U275
												L2	SP07U550
												N-G	SP07U175

The unit comes equipped with a set of Form C dry contacts. Omit the letter "M" at the end of the part number to remove this feature.

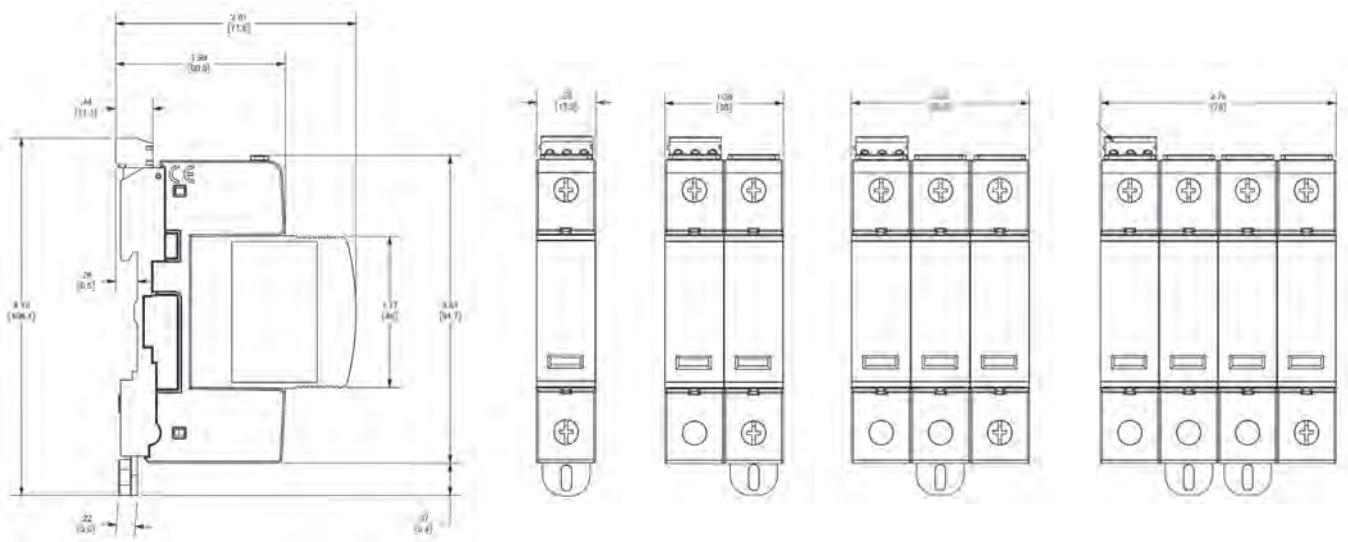
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Surge-Trap® Pluggable STP-75 Series

Surge Protective Device

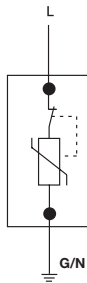
**SURGE
PROTECTION**

PRODUCT DIMENSIONS

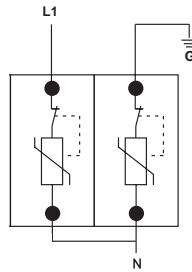


WIRING DIAGRAMS

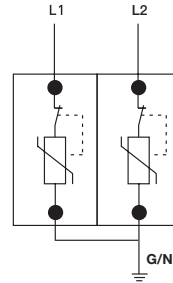
Single Phase
1 Pole - 2 Wire



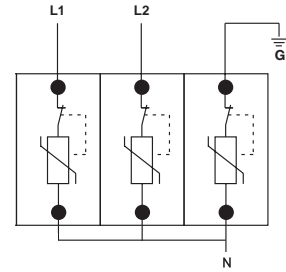
Single Phase
2 Pole - 3 Wire



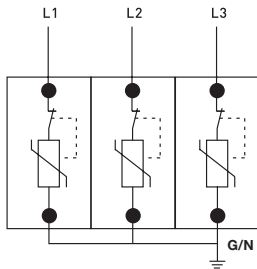
Split Phase
2 Pole - 3 Wire



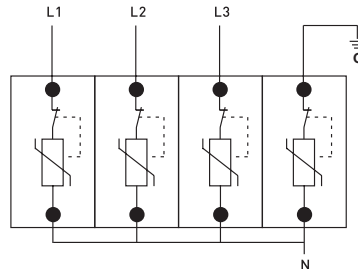
Split Phase
3 Pole - 4 Wire



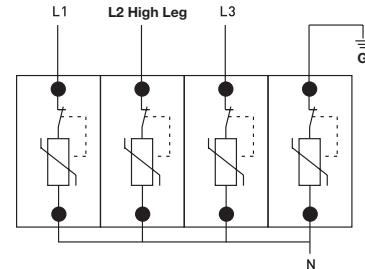
3 Phase Delta / 3 Phase Wye
3 Pole - 4 Wire



3 Phase Wye
4 Pole - 5 Wire



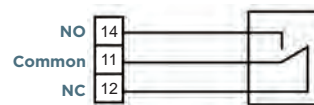
3 Phase Delta High-Leg
4 Pole - 5 Wire



REMOTE STATUS INDICATOR SPECIFICATIONS

Signal Wire Range	#16 to #30 AWG
Terminal Torque	2.2 lb-in
Cont. between Comm + NO	Product Offline, Not Protected
Cont. between Comm + NC	Product Online, Protected

The unit comes equipped with a set of Form C dry contacts. Omit the letter "M" at the end of the part number to remove this feature.



Screwless Pluggable
RC Connector

Surge-Trap[®] Pluggable STP-50 Series

Surge Protective Device

SURGE PROTECTION

DIN-RAIL MOUNT PLUGGABLE FOR ANSI/UL 1449 TYPE 1 AND 2 APPLICATIONS



Surge-Trap Pluggable STP-50 Series Surge Protective Device (SPD) is a no-fuse, fail-safe surge suppressor featuring Mersen's TPMOV[®] technology inside – no need for additional overcurrent protection. DIN-rail mountable featuring a fail-safe self-protected design, visual indicator, and a small footprint. A remote indicator provides status to critical control circuitry. High short circuit rating makes it suitable for most industrial control panels.

Technical Data Overview	
Surge Current Rating (I_{max})	50kA
Nominal discharge current (I_n) [8x20 μ s]	10 – 20kA
Short Circuit Current Rating (SCCR)	200kA
Nominal power frequency	50 Hz or 60 Hz
Response Time	Less than 1 nanosecond (one per phase)
Mounting	35mm DIN-Rail
Wire Range	4 - 14AWG [25mm ² – 2.5mm ²] Solid / Stranded CU
Torque	35.4 lbs-in [4.0 Nm]
Degree of Protection	IP 20 (finger-safe)
Flammability	UL94 V0
Operating & Storage Temperature	- 40°F [40°C] to + 185°F [85°C]
Visual Status Indicator flag	Green = Functional / Red = Replace
Remote Status Indicator	Form C Dry Contacts

For applications requiring a higher kA rating, Mersen's Surge-Trap STP-75 is available.

FEATURES/BENEFITS

- Designed with industry leading Mersen TPMOV technology
- Easy installation or retrofit
- Reversible chassis allows cable entry from top or bottom
- Replaceable modules with mechanical coding to avoid replacement errors
- 5-year warranty

APPLICATIONS

- Industrial Control Panels
- Water treatment
- Smart grid & LV Metering
- Traffic / ITS applications.
- Intended for use on a wide range of low voltage applications inside appropriate enclosures

APPROVALS/STANDARDS

- ANSI/UL 1449 5th Edition, Open Type 1 SPD Listed, File E210793
- ANSI/IEEE C62.41.1, C62.41.2, C62.45
- RoHS Compliant



CATALOG NUMBERS AND ELECTRICAL CHARACTERISTICS

1 Pole - 2 Wires

Catalog Number	Nominal System Voltage (VAC)	I (kA)	Surge Current Rating	Maximum Continuous Operating Voltage (MCOV, VAC)				Voltage Protection Rating (VPR, VAC)				Replacement plugs
				L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	
STP120P05M	120V Single Phase	20	50 kA	175	-	-	-	600	-	-	-	SP05U175
STP230P05M	240V Single Phase	20	50 kA	275	-	-	-	900	-	-	-	SP05U275
STP277P05M	277V Single Phase	20	50 kA	320	-	-	-	1000	-	-	-	SP05U320
STP347P05M	347V Single Phase	10	50 kA	420	-	-	-	1500	-	-	-	SP05U420

2 Poles - 3 Wires

Catalog Number	Nominal System Voltage (VAC)	I (kA)	Surge Current Rating	Maximum Continuous Operating Voltage (MCOV, VAC)				Voltage Protection Rating (VPR, VAC)				Replacement plugs
				L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	
STP120PN05M	120V Single Phase	20	50 kA	175	-	-	350	600	1200	1200	-	SP05U175
STP240S05M	240/120V Split Phase	20	50 kA	175	-	-	350	600	-	-	1200	SP05U175
STP480S05M	480/240V Split Phase	20	50 kA	275	-	-	550	900	-	-	1800	SP05U275

3 Poles - 4 Wires

Catalog Number	Nominal System Voltage (VAC)	I (kA)	Surge Current Rating	Maximum Continuous Operating Voltage (MCOV, VAC)				Voltage Protection Rating (VPR, VAC)				Replacement plugs
				L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	
STP240SN05M	120/240 - Split Phase	20	50 kA	175	-	175	350	600	1200	1200	1200	SP05U175
STP208Y05M	208/120V 3-Phase Wye	20	50 kA	175	-	-	350	600	-	-	1200	SP05U175
STP480Y05M	480/277V 3-Phase Wye	20	50 kA	320	-	-	640	1000	-	-	2000	SP05U320
STP600Y05M	600/347V 3-Phase Wye	10	50 kA	420	-	-	840	1500	-	-	2500	SP05U420
STP690Y05M	690/400V 3-Phase Wye	10	50 kA	550	-	-	1100	1500	-	-	3000	SP05U550
STP240D05M	240V 3-Phase Delta	20	50 kA	-	275	-	550	-	900	-	1800	SP05U275
STP480D05M	480V 3-Phase Delta	10	50 kA	-	550	-	1100	-	1500	-	3000	SP05U550

4 Poles - 5 Wires

Catalog Number	Nominal System Voltage (VAC)	I (kA)	Surge Current Rating	Maximum Continuous Operating Voltage (MCOV, VAC)				Voltage Protection Rating (VPR, VAC)				Replacement plugs	
				L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	L1, L2, L3	
STP208YN05M	208/120V 3-Phase Wye	20	50 kA	175	175	175	350	600	1200	600	1200	SP05U175	
STP480YN05M	480/277V 3-Phase Wye	20	50 kA	320	495	175	640	1000	1500	1000	2000	L1,2,3	SP05U320
												N-G	SP05U175
STP600YN05M	600/347V 3-Phase Wye	10	50 kA	420	695	275	840	1500	2000	800	2500	L1,2,3	SP05U420
												N-G	SP05U275
STP690YN05M	690/400V 3-Phase Wye	10	50 kA	550	870	320	1100	1500	2500	1000	3000	L1,2,3	SP05U550
												N-G	SP05U320
STP240HN05M	240/120V High-Leg Delta	20	50 kA	350	175	450	275	1200	600	1500	800	L1,3	SP05U175
												L2	SP05U275
												N-G	SP05U175
STP480HN05M	480/240V High-Leg Delta	10	50 kA	550/450	275/175	825/725	550	1500	800 / 600	2500 / 2000	1500	L1,3	SP05U275
												L2	SP05U550
												N-G	SP05U175

The unit comes equipped with a set of Form C dry contacts. Omit the letter "M" at the end of the part number to remove this feature.

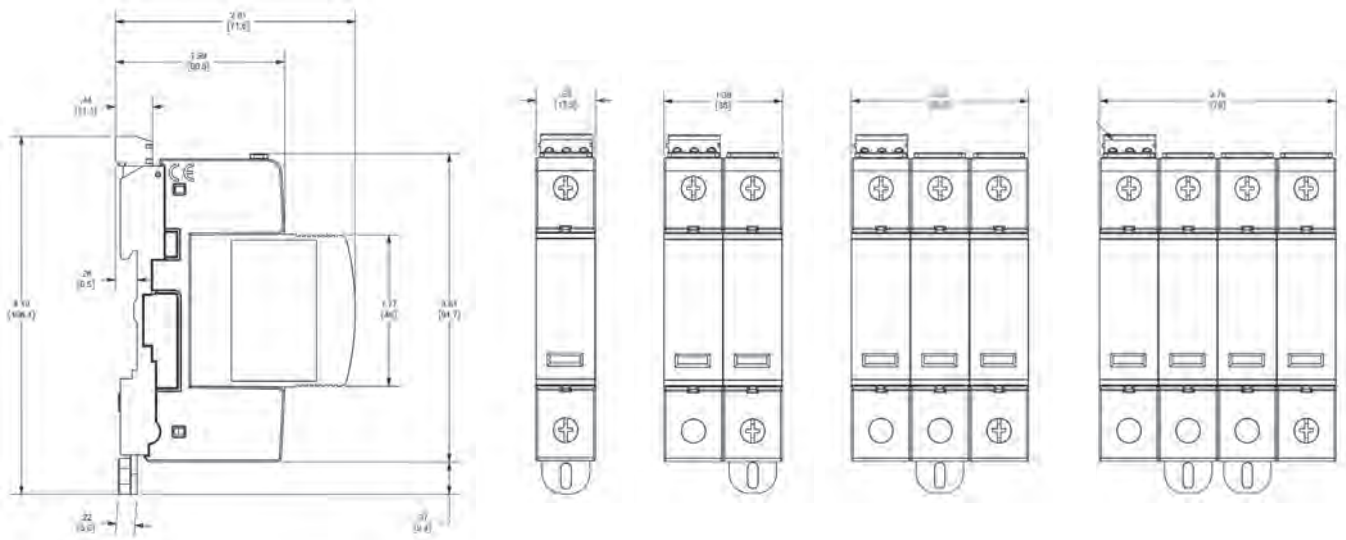
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Surge-Trap® Pluggable STP-50 Series

Surge Protective Device

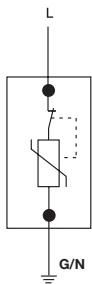
**SURGE
PROTECTION**

PRODUCT DIMENSIONS

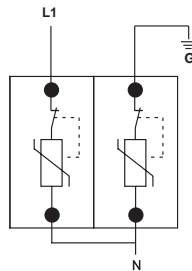


WIRING DIAGRAMS

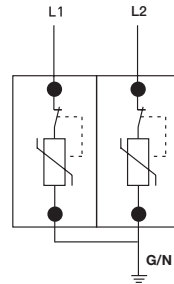
Single Phase
1 Pole - 2 Wire



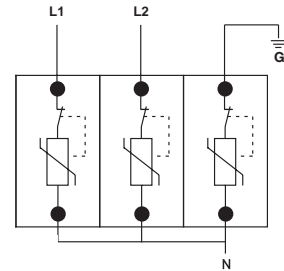
Single Phase
2 Pole - 3 Wire



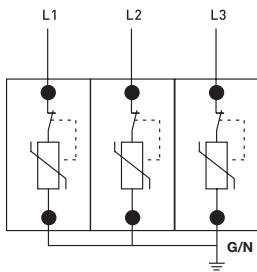
Split Phase
2 Pole - 3 Wire



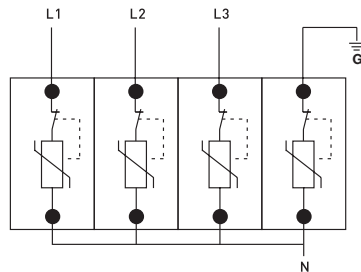
Split Phase
3 Pole - 4 Wire



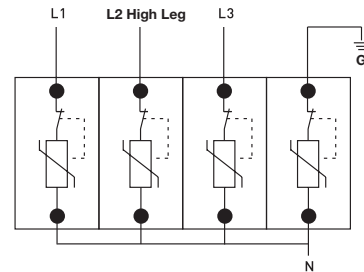
3 Phase Delta / 3 Phase Wye
3 Pole - 4 Wire



3 Phase Wye
4 Pole - 5 Wire



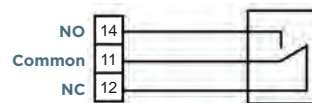
3 Phase Delta High-Leg
4 Pole - 5 Wire



REMOTE STATUS INDICATOR SPECIFICATIONS

Signal Wire Range	#16 to #30 AWG (1.5 mm ² – 0.05 mm ²)
Terminal Torque	2.2 lb-in (0.25 Nm)
Max Voltage - Current	125VAC – 3A
Cont. between Comm + NO	Product Offline, Not Protected
Cont. between Comm + NC	Product Online, Protected

The unit comes equipped with a set of Form C dry contacts.
Omit the letter "M" at the end of the part number to remove this feature.



Screwless Pluggable
RC Connector

Surge-Trap[®] Monobloc ST Series

Surge Protective Device

SURGE PROTECTION

DIN-RAIL MOUNT PLUGGABLE FOR ANSI/UL 1449 TYPE 1 AND 2 APPLICATIONS



Surge-Trap[®] Monobloc Surge Protective Device (SPD) ST Series is a no-fuse, fail-safe surge suppressor featuring Mersen's patented TPMOV[®] technology inside - No need for additional overcurrent protection. UL 1449 5th Edition approved, DIN-rail mountable featuring a fail-safe self-protected design, visual indicator, and a small footprint. A remote indicator provides status to the critical control circuitry. A high short circuit rating makes it suitable for most industrial control panels.

Technical Data Overview	
Surge Current Rating (I_{max})	50kA
Nominal Discharge Current Rating (I_n) (8x20 μ s):	20kA
Short-Circuit Current Rating (SCCR)	200kA
Nominal power frequency	50 Hz or 60 Hz
Response Time	Less than 1 nanosecond (one per phase)
Mounting	35mm DIN-Rail
Wire Range	6 - 14AWG (25mm ² - 2.5mm ²) Solid Stranded CU
Torque	14.75 lbs-in (1.67 Nm)
Degree of Protection	IP 20 (finger-safe)
Flammability	UL94 V0
Operating & Storage Temperature	- 40°F (40°C) to + 185°F (85°C)
Visual Status Indicator	Visual Tab - Tab Out = Replace
Remote Status Indicator	Form C Dry Contacts

FEATURES/BENEFITS

- Designed with industry leading Mersen TPMOV technology
- Easy installation
- Cost-effective protection
- Remote Indicator (optional)
- 2-year warranty

APPLICATIONS

- Industrial control panels
- Water treatment
- AC Drives
- Smart grid & LV metering
- Security Systems
- Traffic / ITS applications
- Intended for use on a wide range of low voltage applications inside appropriate enclosures

APPROVALS/STANDARDS

- ANSI/UL 1449 5th Edition, Type 1 Component Assembly, File E210793
- ANSI/IEEE C62.41.1, C62.41.2, C62.45
- RoHS Compliant



CATALOG NUMBERS AND ELECTRICAL CHARACTERISTICS

1 Pole

Catalog Number	Nominal Voltage (VAC)	I _n (kA)	Maximum Continuous Operating Voltage (MCOV, VAC)				Voltage Protection Rating (VPR, VAC)			
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L
ST1201PGM	120 - 10, 2W	20	180	180	-	-	500	500	-	-
ST2301PGM	240 - 10, 2W	20	270	270	-	-	800	800	-	-
ST2771PGM	277 - 10, 2W	20	320	320	-	-	900	900	-	-

2 Poles

Catalog Number	Nominal Voltage (VAC)	I _n (kA)	Maximum Continuous Operating Voltage (MCOV, VAC)				Voltage Protection Rating (VPR, VAC)			
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L
ST240SPGM	120/240 - Split 0, 3W	20	180	180	-	360	500	500	-	900
ST480SPGM	240/480 - Split 0, 3W	20	270	270	-	540	800	800	-	1500

3 Poles

Catalog Number	Nominal Voltage (VAC)	I _n (kA)	Maximum Continuous Operating Voltage (MCOV, VAC)				Voltage Protection Rating (VPR, VAC)			
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L
ST2083PYGM	120/208 - 30 Wye, 4W	20	180	18	-	360	500	500	-	900
ST4803PYGM	277/480 - 30 Wye, 4W	20	320	320	-	640	900	900	-	1800
ST6003PYGM	347/600 - 30 Wye, 4W	20	420	420	-	840	1200	1200	-	2000
ST6903PYGM	400/690 - 30 Wye, 4W	20	510	510	-	1020	1500	1500	-	3000
ST2403PDGM	240 - 30 Delta, 4W	20	270	270	-	540	800	800	-	1500
ST4803PDGM	480 - 30 Delta, 4W	20	550	550	-	1100	1500	1500	-	3000

4 Poles

Catalog Number	Nominal Voltage (VAC)	I _n (kA)	Maximum Continuous Operating Voltage (MCOV, VAC)				Voltage Protection Rating (VPR, VAC)			
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L
ST2083PYM	120/208 - 30 Wye, 5W	20	180	360	180	360	500	900	500	900
ST4803PYM	277/480 - 30 Wye, 5W	20	320	470	150	640	1000	1500	500	1800
ST6006PYM	347/600 - 30 Wye, 5W	20	420	690	270	840	1500	2500	800	2500
ST6903PYM	400/690 - 30 Wye, 5W	20	1020	510	510	1020	3000	1500	1500	3000

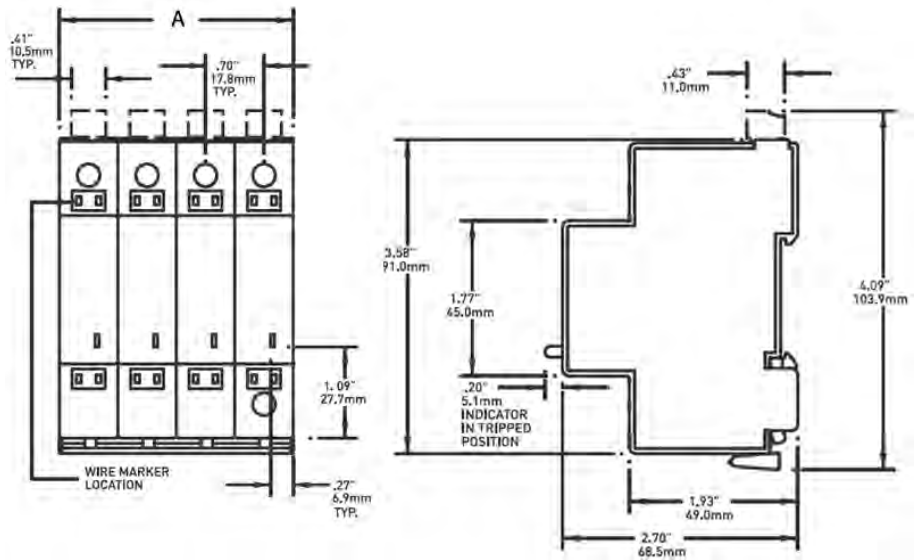
PV

Catalog Number	Nominal Voltage (VDC)	I _n (kA)	SCCR (kA)	Maximum Continuous Operating Voltage (MCOV, VAC)	Voltage Protection Rating (VPR, VAC)
ST600PVM	600 (2 Poles)	20	10	720	1500
ST600YPVM	600 (3 Poles)	20	10	750	2400
ST1000PVM	1000 (3 Poles)	20	10	1250	3000

Product is available without Form C dry contacts. Omit the letter "M" at the end of the part number to remove this feature.

PRODUCT DIMENSIONS

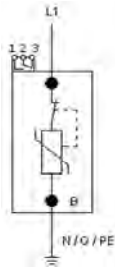
Poles	A	
	In	mm
1 Pole	0.70	17.8
2 Pole	1.39	35.5
3 Pole	2.10	53.3
4 Pole	2.80	71.0



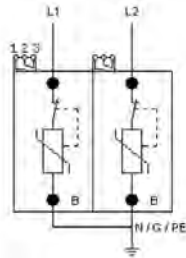
WIRING DIAGRAMS

For more information on wiring, please refer to the installation manual

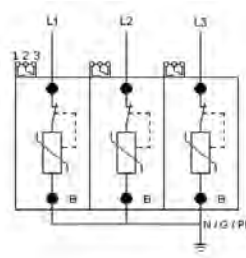
Single Phase
1 Pole - 2 wire



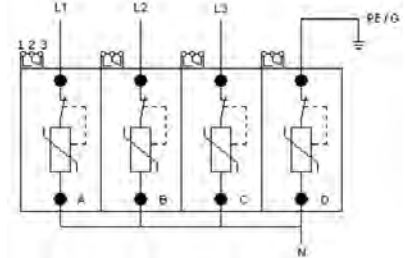
Single Phase
2 Pole - 3 wire



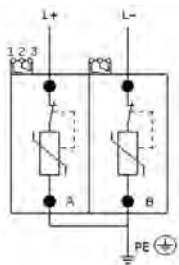
3 Phase Delta / 3 Phase Wye
3 Pole - 4 wire



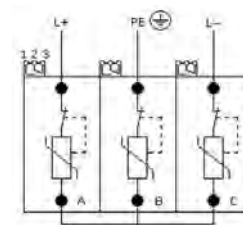
3 Phase Wye
4 Pole - 5 wire



2 Pole - Photovoltaic

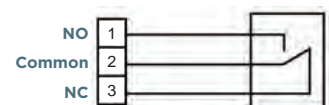
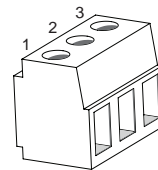


3 Pole - Photovoltaic



REMOTE STATUS INDICATOR SPECIFICATIONS

Signal Wire Range	#16 to # 30 AWG [1.5 mm ² – 0.05 mm ²]
Terminal Torque	2.2 lb-in (0.25 Nm)
Max Voltage - Current	125VAC – 3A
Cont. between Comm + NO	Product Offline, Not Protected
Cont. between Comm + NC	Product Online, Protected



The unit comes equipped with a set of Form C Dry contacts.
Omit the letter "M" at the end of the part number to remove this feature.

Surge-Trap[®] STPT2-40k-PV Series

Surge Protective Device

SURGE PROTECTION

DIN-RAIL PLUGGABLE SPD FOR PHOTOVOLTAIC APPLICATIONS



STPT2-40k-PV is the series of devices that provide advanced overvoltage protection to photovoltaic systems by utilizing Mersen's optimized dynamic thermal disconnection system, which does not require additional overcurrent protection (back-up fuse) due to its high short-circuit withstand rating. These surge protective devices are suitable for all PV applications: large-scale, rooftop, and self-consumption (off-grid) DC installations.

Technical Data Overview	
Surge Current Rating (I_{max})	40kA – Per Phase & Per Mode
System Voltage	660 to 1500 VDC
System Type	Y PV, U PV, multiple MPPT
Nominal discharge current (I_n) (8x20 μ s)	10kA - 20kA
Short Circuit Current Rating (SCCR)	50 kA, 65 kA, 100 kA
Response Time	Less than 1 nanosecond (one per phase)
Mounting	35mm DIN-Rail
Wire Range	4 - 14AWG (35mm ² – 6mm ²) Solid / Stranded Cu
Degree of Protection	IP 20 (finger-safe)
Flammability	UL94-5VA
Operating & Storage Temperature	- 40°F (40°C) to + 185°F (85°C)
Relative Humidity Range	0 to 95% non-condensing
Visual Status Indicator	Green = Functional / Red = Replace

FEATURES & BENEFITS

- Designed with industry leading Mersen TMOV[®] technology
- DIN-rail mountable, plug-in format
- Multiple MPPT specific products
- Visual and remote end of life indicators
- Reversible chassis to allow cable entry from above or below
- Mechanically coded cartridges to avoid cartridge replacement errors
- 3-year manufacturer's warranty

APPLICATIONS

- Photovoltaic
- Wind power

APPROVALS/STANDARDS

- ANSI/UL 1449 5th Edition, Type 1 SPD, File E468946
- EN 50539-11
- IEC 61643-31
- RoHS Compliant



CATALOG NUMBERS AND ELECTRICAL CHARACTERISTICS

Large-scale and Rooftop PV - 3 Poles

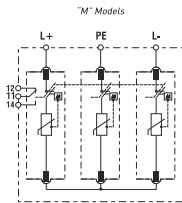
Catalog Number	Item Number	Maximum Continuous Operating Voltage-MCOV (VDC)	Voltage Protection Rating - VPR (VDC)	In (kA)	SCCR (kA)	Replacement plugs
STPT2-40K600V-YPV	83020138	600	1800	20	100	83020005
STPT2-40K600V-YPVM	83020139	600	1800	20	100	83020005
STPT2-40K1000V-YPV	83020140	1000	3000	20	50	83020006
STPT2-40K1000V-YPVM	83020141	1000	3000	20	50	83020006
STPT2-40K1500V-YPV	83020158	1500	4000	10	65	83020010
STPT2-40K1500V-YPVM	83020159	1500	4000	10	65	83020010

Multipole for Multiple MPPT Inverters

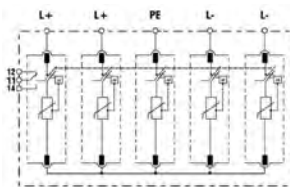
Catalog Number	Item Number	Maximum Continuous Operating Voltage-MCOV (VDC)	Voltage Protection Rating - VPR (VDC)	In (kA)	SCCR (kA)	Replacement plugs
STPT2-40K1000V-5YPVM	83020188	1000	3000	20	50	83020006
STPT2-40K1000V-5Y2PVM	83020223	1000	3000	20	50	83020006
STPT2-40K1000V-8YPVM	83020204	1000	3000	20	50	83020006

ELECTRICAL DIAGRAMS

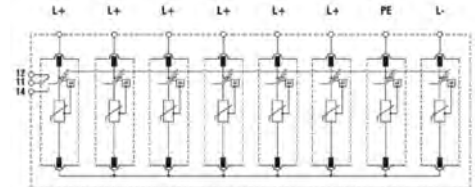
3 Poles



5 Poles

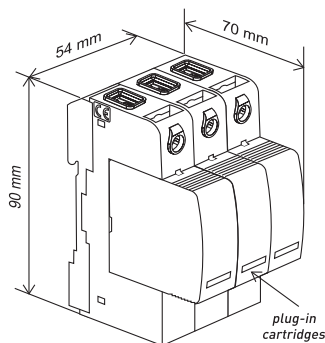


8 Poles

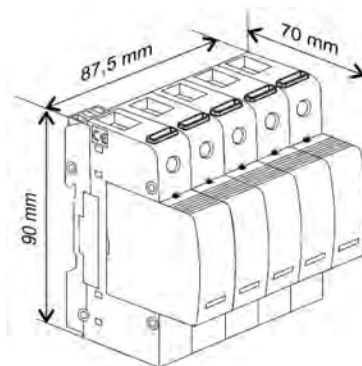


DIMENSIONS

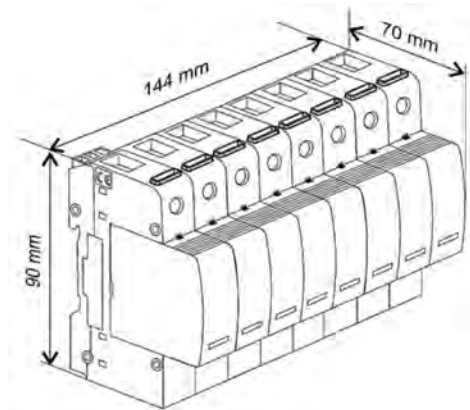
3 Poles



5 Poles



8 Poles



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TPMOV[®] (Thermally Protected MOV)

Thermally Protected Metal Oxide Varistor

SURGE PROTECTION

SELF-PROTECTED MOV UTILIZING THE FASTEST & SAFEST DISCONNECT SYSTEM AVAILABLE FOR DESIGNERS OF SPDs & ELECTRICAL EQUIPMENT



Mersen's TPMOV technology eliminates common failure modes that occur in the field with standard metal oxide varistors. Internally it is comprised of a voltage clamping device and a disconnecting apparatus that monitors the status of the metal oxide disk, making the TPMOV surge suppression component a fail-safe device. In the event of an overvoltage breakdown, the metal oxide disc is securely disconnected from the system power by an arc shield. Upon failure, the TPMOV surge suppression component is also equipped with a visual pin indicator as well as a normally open micro-switch, providing remote indication if applicable.

TPMOV7 Series Surge Suppression Component: 50% more surge capacity, Same footprint

The TPMOV7 Series is rated for **75kA - 8/20μs peak surge current** and is available for maximum continuous operating voltages (MCOV) from 150V to 320VAC.

Technical Data Overview	
Volts (U _n)	150-550VAC
Nominal Discharge Current Rating (I _n)	20kA
Surge Capacity	75kA
Short-Circuit Current Rating (SCCR)	200kA
Response Time	Less than 1 nanosecond (one per phase)
Ambient Temperature Rating	-40°C to +85°C

FEATURES/BENEFITS

- Industry-leading TPMOV technology available in 50kA and 75kA surge capacities
- Consistent footprint with 25-40mm MOVs
- Built-in visual/remote indication optional
- Wave solderable
- No additional overcurrent protective device (fuses) required

APPLICATIONS

- For OEM design and build

APPROVALS/STANDARDS

- ANSI/UL 1449 5th Edition, Type 1 Component Assembly SPD, File E210793
- RoHS Compliant



TPMOV® (Thermally Protected MOV)

Thermally Protected Metal Oxide Varistor

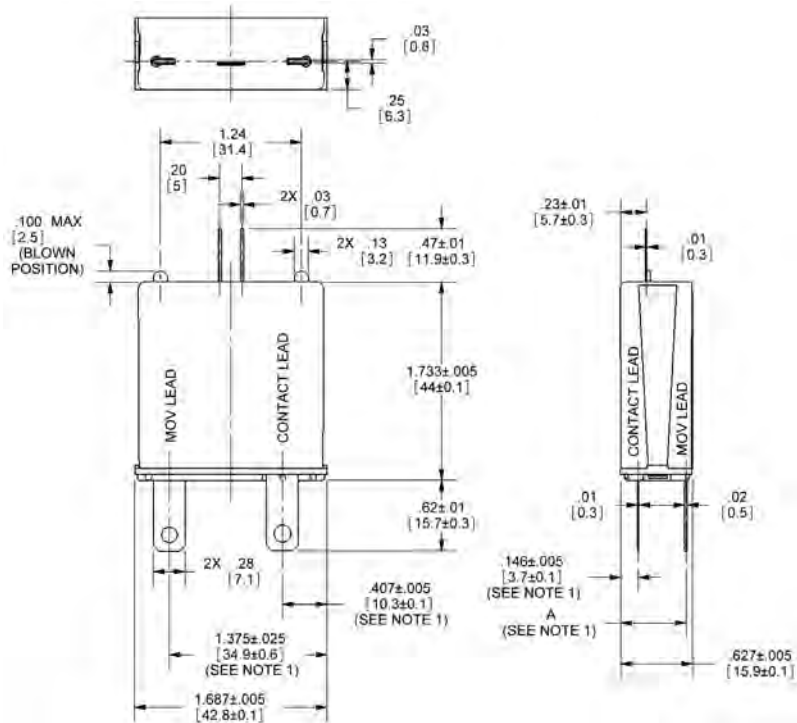
SURGE PROTECTION

Catalog Number (includes suffixes*)	Maximum Continuous Operating Voltage (MCOV)	Voltage Protection Rating (VPR)	Nominal Discharge Current (kA)	Operating Temperature	TPMOV Dimension A (inches)
150TPMOV (7)	150VAC	600	20	-40°C to +85°C	0.485
180TPMOV	180VAC	800	20	-40°C to +85°C	0.485
270TPMOV	275VAC	800	20	-40°C to +85°C	0.495
320TPMOV (7)	320VAC	1000	20	-40°C to +85°C	0.51
420TPMOV	420VAC	1500	20	-40°C to +85°C	0.54
510TPMOV	510VAC	1500	20	-40°C to +85°C	0.54
550TPMOV	550VAC	1500	20	-40°C to +85°C	0.545

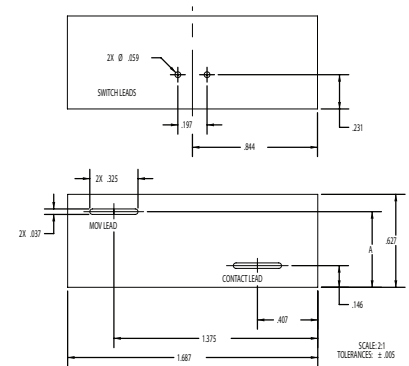
Catalog - Ordering System (TPMOV)

<p>150 Maximum Continuous Operating Voltage (MCOV)</p> <p>150: 150VAC 180: 180VAC 270: 275VAC 320: 320VAC 420: 420VAC 510: 510VAC 550: 550VAC</p>	<p>TPMOV Model Series</p> <p>TPMOV: Thermally Protected MOV</p>	<p>7 Surge Capacity</p> <p>BLANK: 50kA 7: 75kA</p>	<p>SL Mechanical Options</p> <table border="1"> <thead> <tr> <th>Suffix</th> <th>PCB Leads</th> <th>Tact Switch</th> <th>Visual Tabs</th> <th>Pkg Qty</th> </tr> </thead> <tbody> <tr> <td>Blank</td> <td>No</td> <td>Yes</td> <td>Yes</td> <td>10</td> </tr> <tr> <td>S</td> <td>Yes</td> <td>Yes</td> <td>No</td> <td>10</td> </tr> <tr> <td>SL</td> <td>Yes</td> <td>Yes</td> <td>No</td> <td>500</td> </tr> <tr> <td>ST</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> <td>10</td> </tr> <tr> <td>SLT</td> <td>Yes</td> <td>Yes</td> <td>Yes</td> <td>500</td> </tr> <tr> <td>HV</td> <td>No</td> <td>Yes-HV</td> <td>Yes</td> <td>10</td> </tr> <tr> <td>S-HV</td> <td>Yes</td> <td>Yes-HV</td> <td>Yes</td> <td>10</td> </tr> <tr> <td>SL-HV</td> <td>Yes</td> <td>Yes-HV</td> <td>Yes</td> <td>500</td> </tr> </tbody> </table> <p>* For details regarding HV microswitch please consult factory</p>	Suffix	PCB Leads	Tact Switch	Visual Tabs	Pkg Qty	Blank	No	Yes	Yes	10	S	Yes	Yes	No	10	SL	Yes	Yes	No	500	ST	Yes	Yes	Yes	10	SLT	Yes	Yes	Yes	500	HV	No	Yes-HV	Yes	10	S-HV	Yes	Yes-HV	Yes	10	SL-HV	Yes	Yes-HV	Yes	500
Suffix	PCB Leads	Tact Switch	Visual Tabs	Pkg Qty																																												
Blank	No	Yes	Yes	10																																												
S	Yes	Yes	No	10																																												
SL	Yes	Yes	No	500																																												
ST	Yes	Yes	Yes	10																																												
SLT	Yes	Yes	Yes	500																																												
HV	No	Yes-HV	Yes	10																																												
S-HV	Yes	Yes-HV	Yes	10																																												
SL-HV	Yes	Yes-HV	Yes	500																																												

Dimensional Drawing of TPOV technology protected modules



Board Layout Dimensions



VOLTAGE	A Dimension
550	0.545
420/510	0.54
320	0.51
270	0.495
150/180	0.485

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25TPMOV[®] (Thermally Protected MOV)

Thermally Protected Metal Oxide Varistor

SURGE PROTECTION

SELF-PROTECTED MOV UTILIZING THE FASTEST & SAFEST DISCONNECT SYSTEM AVAILABLE FOR DESIGNERS OF SPDs & ELECTRICAL EQUIPMENT



30% SMALLER FOOTPRINT - SAME RELIABLE TPMOV TECHNOLOGY

Mersen's TPMOV technology eliminates common failure modes that occur in the field with standard metal oxide varistors. Internally it is comprised of a voltage clamping device and a disconnecting apparatus that monitors the status of the metal oxide disk, making the TPMOV surge suppression component a fail-safe device. Upon failure, the TPMOV surge suppression component is also equipped with a visual pin indicator as well as a normally open micro-switch, providing remote indication if applicable. Mersen's 25TPMOV series surge suppression component is rated for 25kA - 8/20 μ s peak surge current and is available for maximum continuous operating voltages (MCOV) from 150V to 320VAC.

Technical Data Overview	
Volts [U _n]	150-320VAC
Nominal Discharge Current Rating [I _n]	10kA
Surge Capacity	25kA
Short-Circuit Current Rating [SCCR]	200kA
Response Time	Less than 1 nanosecond (one per phase)
Ambient Temperature Rating	-40°C to +85°C

FEATURES/BENEFITS

- Industry leading TPMOV technology
- Now available in a standard 25mm MOV footprint
- Upstream overcurrent protection not required
- Optional built-in end-of-life indication
- Type 1 SPD allows for use in all types of SPD applications

APPLICATIONS

- For OEM design and build

APPROVALS/STANDARDS

- ANSI/UL 1449 5th Edition, Type 1 CA SPD, File E210793
- RoHS Compliant



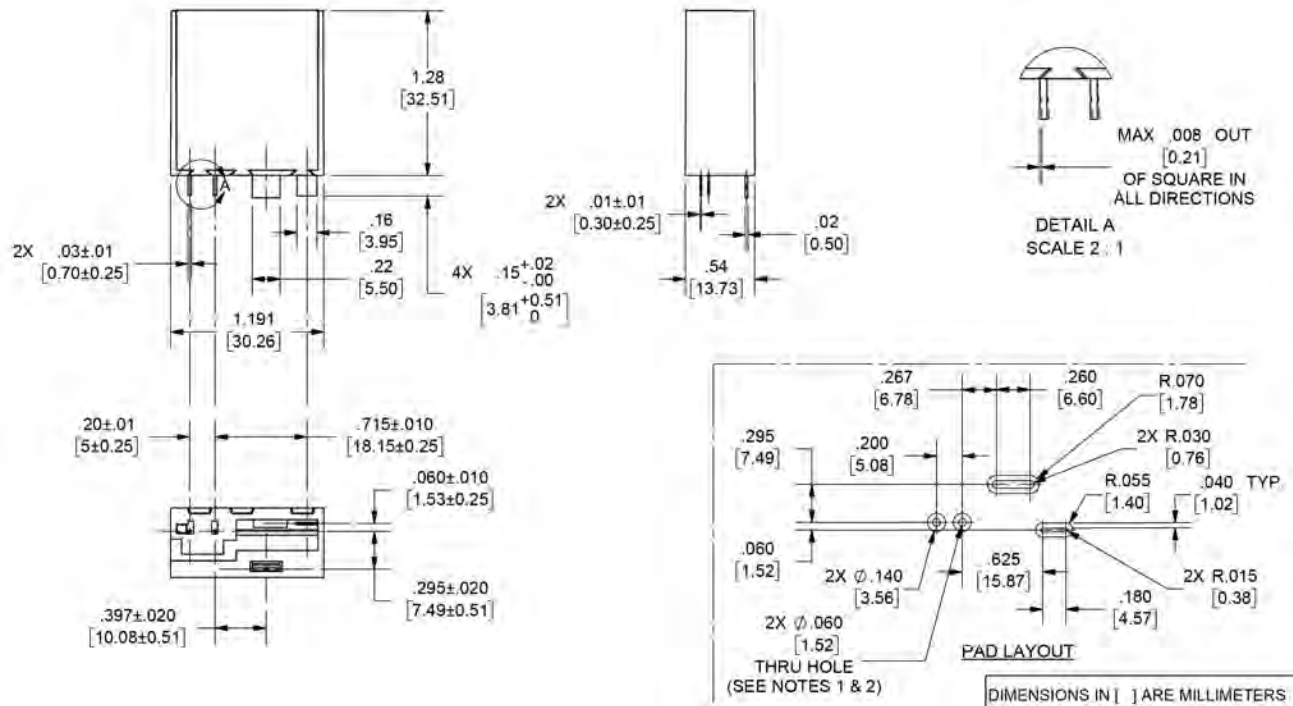
25TPMOV® (Thermally Protected MOV)

Thermally Protected Metal Oxide Varistor

SURGE PROTECTION

General Product Specifications						
Mounting:		Short leads for PCB				
Single Impulse Surge Capacity:		25kA (8/20µs)				
Nominal Discharge Current Rating:		10kA				
Response Time:		≤25 ns				
Frequency:		50-60Hz				
Mechanical End-of-Life Indicator:		N/C Tact Switch (12VDC, 50mA)				
Operating & Storage Temperature:		-40°C to +85°C				
Enclosure:		Thermoplastic				
Flammability:		UL 94 V-0				
Catalog Number	Item Number	I _n	Surge Capacity	SCCR	Maximum Continuous Operating Voltage (MCOV, U _c)	Voltage Protection Rating (VPR) [UL 1449, 6kV, 3kA]
25TPMOVSL150	83050149	10kA	25kA	200kA	150VAC	600V
25TPMOVSL320	83050150	10kA	25kA	200kA	320VAC	1000V

Dimensional Drawing of TPMOV technology protected modules **TPMOV TECHNOLOGY**



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VSP MOV Protector Fuse

Surge Suppressor Fuse

SURGE PROTECTION

COMPONENT SPD FOR OEM DESIGN AND BUILD



Mersen surge suppression fuses are specially designed to address the protection of SPD systems. Our surge suppression fuses have been specially designed to withstand 8/20 μ Sec surge pulses without opening, allowing the SPD system to react to the surge. All surge suppression fuses have a 8/20 μ Sec surge rating, not a continuous current rating. Under AC short circuit conditions these surge suppression fuses are very current limiting.

Technical Data Overview	
Volts	600VAC
Surge Rating	5-100kA 8/20 μ Sec
Interrupting Rating (IR)	200kA

FEATURES/BENEFITS

- VSP fuses rated 600VAC, 200kA I.R.
- Surge ratings of 5-100kA 8/20 μ Sec capacity
- Various mounting configurations ferrules, blade, bolt-in, PC board mount

APPLICATIONS

- Protection of SPD systems

APPROVALS/STANDARDS

- ANSI/UL 248 Special Purpose MOV Fuse, File E60314



VSP MOV Protector Fuse

Surge Suppressor Fuse

SURGE PROTECTION

Product Performance Data						VSP [5-20]-2,R,H,S
Catalog No. [Connection suffix]	Voltage Rating [AC]	8x20 μSEC Surge Rating	Melting i ² t [A2S]	Clearing i ² t [A2S]	I _{PEAK} @ 100kA 60 Hz [A]	
VSP5-2,-R,-H,-S	600V	5,000	341	936	3,652	
VSP10-2,-R,-H,-S	600V	10,000	1,541	3,744	5,794	
VSP15-2,-R,-H,-S	600V	15,000	3,072	8,424	7,591	
VSP20-2,-R,-H,-S	600V	20,000	4,992	14,400	9,194	
VSP30,-2	600V	30,000	12,507	33,696	12,044	
VSP40,-2	600V	40,000	19,543	59,904	14,588	
VSP50,-2	600V	50,000	32,020	93,600	16,925	
VSP60,-2	600V	60,000	42,808	134,784	19,110	
VSP70,-2	600V	70,000	61,152	183,456	21,176	
VSP80,-2	600V	80,000	79,872	239,616	23,146	
VSP90,-2	600V	90,000	99,000	303,264	25,034	
VSP100,-2	480V	100,000	121,500	374,400	26,854	
VSP100-XL	600V	100,000	121,500	374,400	26,854	

Recommended Fuse Blocks for VSP Fuses				VSP [30-100]-2
VSP[5-20]-2				
Number of Poles	Screw with Double Quick Connects	Pressure Plate with Double Quick Connects	Copper Box Connector	
ADDER	30310	30320	30350	
1	30311	30321	30351	
2	30312	30322	30352	
3	30313	30323	30353	

VSP[30-100]-2				VSP30-100
Number of Poles	Catalog Number			
ADDER	FB60J30B1	FB60J30S1	FB60J30P1	
1	FB60J30B1	FB60J30S1	FB60J30P1	
2	FB60J30B2	FB60J30S2	FB60J30P2	
3	FB60J30B3	FB60J30S3	FB60J30P3	

Mounting Options			VSP100-XL
Double Hole Mount (Round Holes) 	PC Board Mounting 	Surface Screw Mount 	

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Surge-Rated Disconnect Switch

Disconnect Switch

SURGE PROTECTION

COMPONENT SPD FOR OEM DESIGN AND BUILD



The Surge Switch is an extremely compact, high performance, manually operated, non-fused switch. It is specifically designed to withstand the high surge current of 200kA with an 8x20 μ s waveform seen in today's transient voltage surge protection device (SPD) applications. Mersen's Surge Switch utilizes a unique contact design that actually clamp contacts tighter during a surge.

Technical Data Overview	
Volts (U_n)	600VAC
Amps	600A
Surge Rating	200kA 8x20 μ s wave form

FEATURES/BENEFITS

- Only surge rated switch available today
- Compact footprint
- Extremely reliable
- Defeatable pistol handles automatically relatch when panel door is closed, no tool necessary to reset latch
- Direct mount handle option

APPLICATIONS

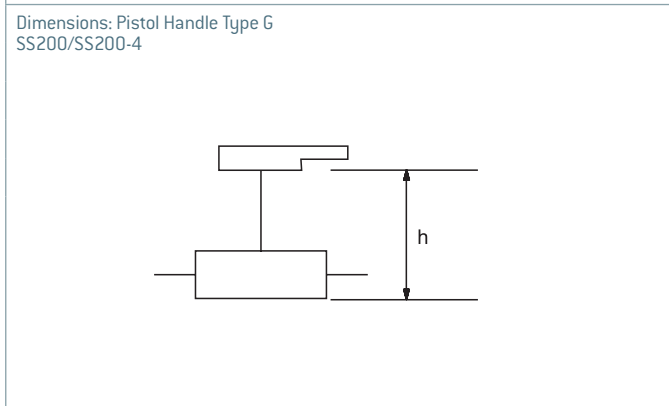
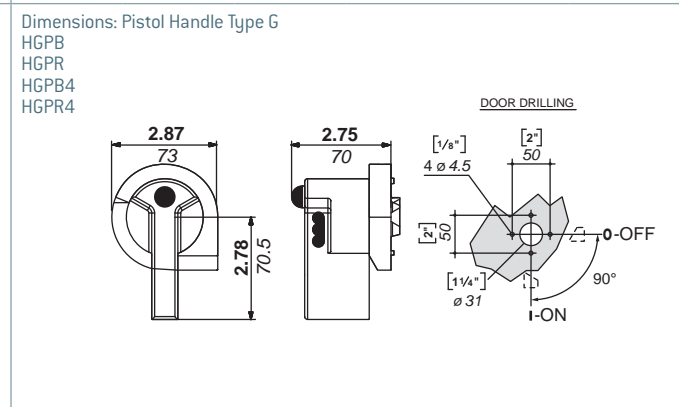
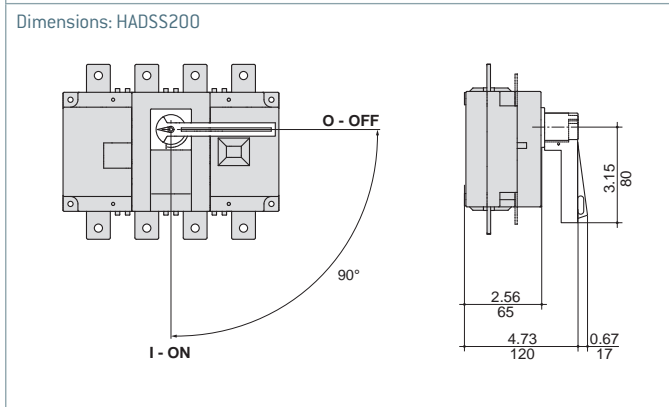
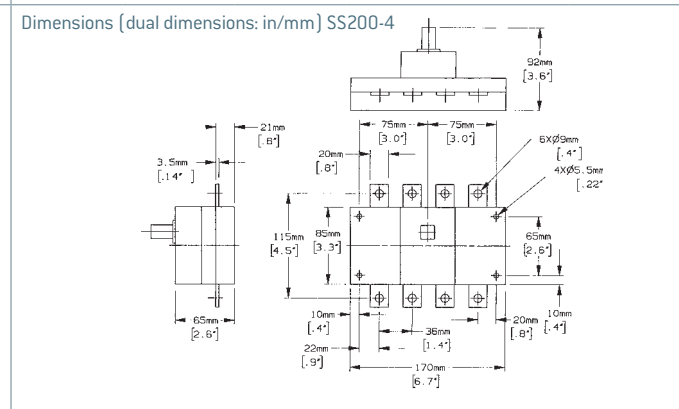
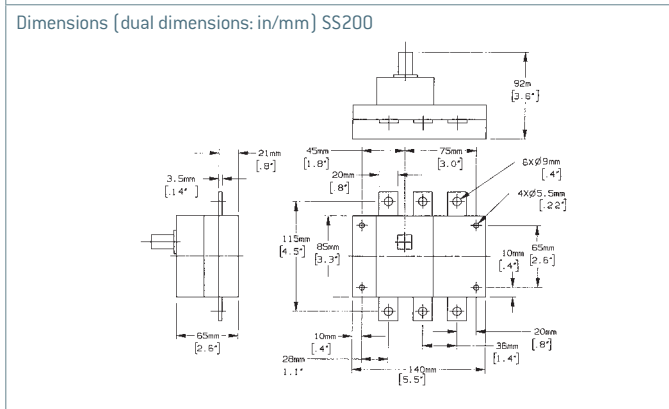
- For OEM design and build

APPROVALS/STANDARDS

- UL Listed Guide NRNT, File E224922



Catalog Number	Description
SS200	3-pole, surge switch, 200kA 8x20 μs
SS200-4	4-pole, surge switch, 200kA 8x20 μs
HADSS200	Direct mount black handle
HGPB	External black handle, NEMA 1,3R, 12 (IEC IP 54), defeatable
HGPR	External red handle, NEMA 1,3R,12 (IEC IP 54), defeatable
HGPB4	External black handle, NEMA 1,3R,12,4,4X (IEC IP 65), defeatable
HGPR4	External red handle, NEMA 1,3R,12,4,4X (IEC IP 65), defeatable
SG200-10	Shaft, 7.9 in (200 mm)
SG320-10	Shaft, 12.6 in (320 mm)
SG400-10	Shaft, 15.7 in (400 mm)
TS200SS	Terminal Shield, 3-pole
TS2004SS	Terminal Shield, 4-pole



Shaft Length		h Minimum	Dimension	h Maximum	Dimension
in	mm	in	mm	in	mm
7.9	200	4.88	124	9.29	236
12.6	320	4.88	124	14.01	356
15.7	400	4.88	124	17.16	436

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