

# ST Series Modular

Surge-Trap®

**SURGE PROTECTIVE DEVICE**

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



Surge-Trap® Modular Surge Protective Device (SPD) is a no-fuse, fail-safe surge suppressor featuring Mersen's TPMOV® technology inside. UL 1449 5th Edition approved, it is DIN-rail mountable featuring a fail-safe self-protected design, visual indicator, and a small footprint. A remote indicator option provides status to critical control circuitry. The Surge-Trap Modular SPD has a high short circuit rating and a thermally protected MOV, which eliminates the need for additional overcurrent protection devices.

## FEATURES AND BENEFITS:

- Easy installation or retrofit
- DIN-rail mountable
- Fail-safe, self-protected design
- Remote indicator (optional)
- Visual indicator
- IP20 finger-safe design
- Small footprint
- No additional overcurrent protection devices required
- 2-year warranty

## RATINGS:

- **Volts ( $U_n$ ):** 120-690VAC
- **Nominal Discharge Current Rating ( $I_n$ ):** 20kA
- **Surge Capacity (per phase and per mode):** 50kA
- **Short-Circuit Current Rating (SCCR):** 200kA

## APPROVALS:

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

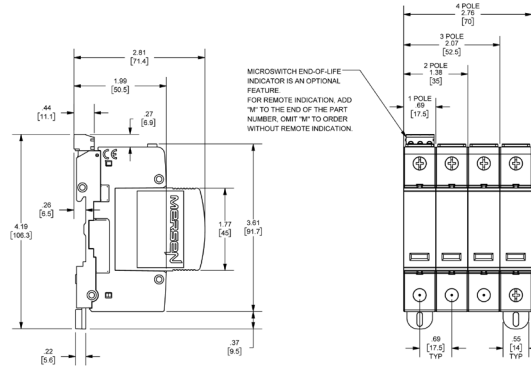


| GENERAL PRODUCT SPECIFICATIONS                  |                             |  |     |     |                               |   |      |      |      |                     |
|---|-----------------------------|--|-----|-----|-------------------------------|---|------|------|------|---------------------|
| Mounting:                                       | 35mm DIN-Rail               |  |     |     | Visual End of Life Indicator: | Visual Tab  |      |      |      |                     |
| Wire Range:                                     | 6-14AWG Solid / Stranded CU |  |     |     | Remote End of Life Indicator: | NO/NC Dry Contact<br>(included with "M" suffix at end of part number) |      |      |      |                     |
| Terminal Torque:                                | 14.75 lbs-in                |  |     |     | Frequency:                    | 50-60 Hz  |      |      |      |                     |
| Degree of Protection:                           | IP 20                       |  |     |     | Response Time:                | <25 ns  |      |      |      |                     |
| Flammability:                                   | UL94 V0                     |  |     |     |                               |   |      |      |      |                     |
| Operating & Storage Temperature:                | -40°C to + 85°C             |  |     |     |                               |   |      |      |      |                     |
| 1-POLE, SINGLE-PHASE, 2-WIRE                    |                             |  |     |     |                               |   |      |      |      |                     |
| Catalog Number                                  | Nominal Voltage (VAC)       | Maximum Continuous Operating Voltage (MCOV, VAc) |     |     |                               | Voltage Protection Rating (VPR, VAC)                                  |      |      |      | I <sub>n</sub> (kA) |
|   |                             | L-N  | L-G | N-G | L-L                           | L-N   | L-G  | N-G  | L-L  |                     |
| ST1201PG(M)                                     | 120                         | 180  | 180 | -   | -                             | 500   | 500  | -    | -    | 20                  |
| ST2301PG(M)                                     | 240                         | 270  | 270 | -   | -                             | 800   | 800  | -    | -    | 20                  |
| ST2771PG(M)                                     | 277                         | 320  | 320 | -   | -                             | 900   | 900  | -    | -    | 20                  |
| 2-POLE, SPLIT-PHASE, 3-WIRE                     |                             |  |     |     |                               |   |      |      |      |                     |
| Catalog Number                                  | Nominal Voltage (VAC)       | Maximum Continuous Operating Voltage (MCOV, VAc) |     |     |                               | Voltage Protection Rating (VPR, VAC)                                  |      |      |      | I <sub>n</sub> (kA) |
|   |                             | L-N  | L-G | N-G | L-L                           | L-N   | L-G  | N-G  | L-L  |                     |
| ST208SPG(M)                                     | 120/208                     | 180  | 180 | -   | 360                           | 500   | 500  | -    | 900  | 20                  |
| ST240SPG(M)                                     | 120/240                     | 180  | 180 | -   | 360                           | 500   | 500  | -    | 900  | 20                  |
| ST480SPG(M)                                     | 240/480                     | 270  | 270 | -   | 540                           | 800   | 800  | -    | 1500 | 20                  |
| 3-POLE, 3-PHASE DELTA, 3-WIRE                   |                             |  |     |     |                               |   |      |      |      |                     |
| Catalog Number                                  | Nominal Voltage (VAC)       | Maximum Continuous Operating Voltage (MCOV, VAc) |     |     |                               | Voltage Protection Rating (VPR, VAC)                                  |      |      |      | I <sub>n</sub> (kA) |
|   |                             | L-N  | L-G | N-G | L-L                           | L-N   | L-G  | N-G  | L-L  |                     |
| ST2403PD(M)                                     | 240                         | -  | -   | -   | 270                           | -   | -    | -    | 1000 | 20                  |
| ST4803PD(M)                                     | 480                         | -  | -   | -   | 550                           | -   | -    | -    | 3000 | 20                  |
| 3-POLE, 3-PHASE DELTA, 4-WIRE                   |                             |  |     |     |                               |   |      |      |      |                     |
| Catalog Number                                  | Nominal Voltage (VAC)       | Maximum Continuous Operating Voltage (MCOV, VAc) |     |     |                               | Voltage Protection Rating (VPR, VAC)                                  |      |      |      | I <sub>n</sub> (kA) |
|   |                             | L-N  | L-G | N-G | L-L                           | L-N   | L-G  | N-G  | L-L  |                     |
| ST2403PDG(M)                                    | 240                         | 270  | 270 | -   | 540                           | 800   | 800  | -    | 1500 | 20                  |
| ST4803PDG(M)                                    | 480                         | 550  | 550 | -   | 1100                          | 1500  | 1500 | -    | 3000 | 20                  |
| 3-POLE, 3-PHASE WYE, 4-WIRE                     |                             |  |     |     |                               |   |      |      |      |                     |
| Catalog Number                                  | Nominal Voltage (VAC)       | Maximum Continuous Operating Voltage (MCOV, VAc) |     |     |                               | Voltage Protection Rating (VPR, VAC)                                  |      |      |      | I <sub>n</sub> (kA) |
|   |                             | L-N  | L-G | N-G | L-L                           | L-N   | L-G  | N-G  | L-L  |                     |
| ST2083PYG(M)                                    | 120/208                     | 180  | 180 | -   | 360                           | 500   | 500  | -    | 900  | 20                  |
| ST4803PYG(M)                                    | 277/480                     | 320  | 320 | -   | 640                           | 900   | 900  | -    | 1800 | 20                  |
| ST6003PYG(M)                                    | 347/600                     | 420  | 420 | -   | 840                           | 1200  | 1200 | -    | 2000 | 20                  |
| ST6903PYG(M)                                    | 400/690                     | 510  | 510 | -   | 1020                          | 1500  | 1500 | -    | 3000 | 20                  |
| 4-POLE, 3-PHASE WYE, 5-WIRE, INCLUDING N-G MODE |                             |  |     |     |                               |   |      |      |      |                     |
| Catalog Number                                  | Nominal Voltage (VAC)       | Maximum Continuous Operating Voltage (MCOV, VAc) |     |     |                               | Voltage Protection Rating (VPR, VAC)                                  |      |      |      | I <sub>n</sub> (kA) |
|   |                             | L-N  | L-G | N-G | L-L                           | L-N   | L-G  | N-G  | L-L  |                     |
| ST2083PY(M)                                     | 120/208                     | 180  | 360 | 180 | 360                           | 500   | 900  | 500  | 900  | 20                  |
| ST4803PY(M)                                     | 277/480                     | 320  | 470 | 150 | 640                           | 1000  | 1500 | 500  | 1800 | 20                  |
| ST6003PY(M)                                     | 347/600                     | 420  | 690 | 270 | 840                           | 1500  | 2500 | 800  | 2500 | 20                  |
| ST6903PY(M)                                     | 400/690                     | 1020   | 510 | 510 | 1020                          | 3000  | 1500 | 1500 | 3000 | 20                  |

FOR REMOTE INDICATION, ADD "M" TO THE END OF THE PART NUMBER. EXAMPLE, ST4803PYM.  
OMIT "M" TO ORDER WITHOUT REMOTE INDICATION. EXAMPLE, ST4803PY.

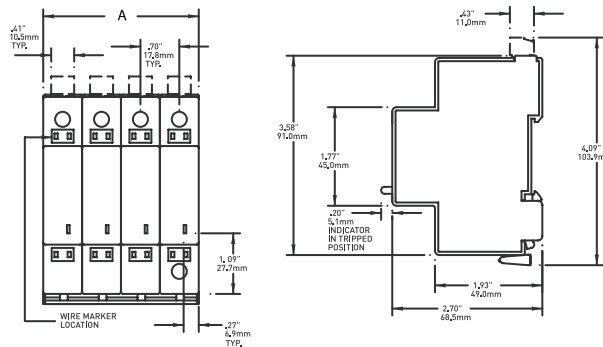
### DIMENSIONS - STP SERIES

| poles  | a    |      |
|--------|------|------|
|        | IN   | MM   |
| 1 Pole | 0.69 | 17.5 |
| 2 Pole | 1.38 | 35   |
| 3 Pole | 2.07 | 52.5 |
| 4 Pole | 2.76 | 70   |

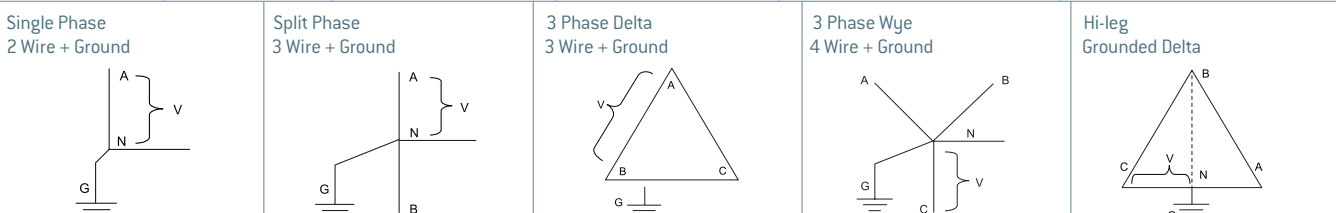
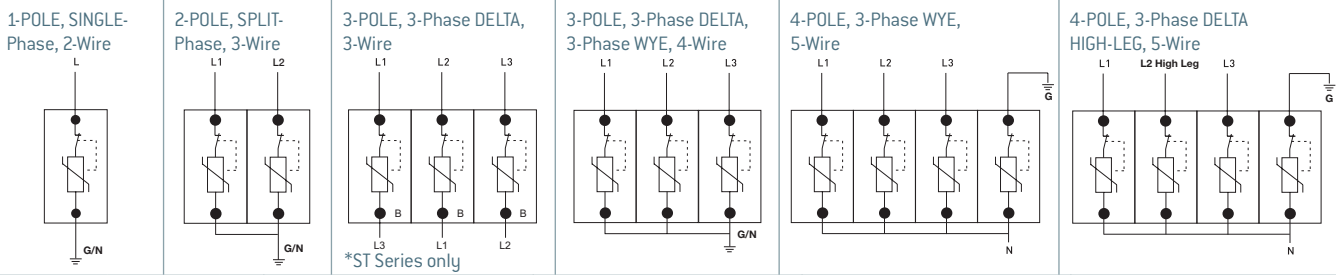


### DIMENSIONS - ST SERIES

| poles  | a    |      |
|--------|------|------|
|        | IN   | MM   |
| 1 Pole | 0.7  | 17.8 |
| 2 Pole | 1.39 | 35.5 |
| 3 Pole | 2.1  | 53.3 |
| 4 Pole | 2.8  | 71   |



### WIRING DIAGRAMS



### REMOTE STATUS INDICATOR

|                  |  |                         |                                |
|------------------|--|-------------------------|--------------------------------|
| ST Series        |  | Signal Wire Range       | #16 to #30 AWG                 |
| STP Series       |  | Terminal Torque         | 2.2 lb-in                      |
|                  |  | Cont. between Comm + NO | Product Offline, Not Protected |
|                  |  | Cont. between Comm + NC | Product Online, Protected      |
| 125 VAC - 3A max |  |                         |                                |

**ST and STP Series:** for remote indication, add "M" to the end of the catalog number. For example, ST4803PYGM.

# STP Series Pluggable

Surge-Trap®

**SURGE PROTECTIVE DEVICE**

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



Surge-Trap® Pluggable Surge Protective Device (SPD) is a no-fuse, fail-safe surge suppressor featuring Mersen's TPMOV® technology inside. UL 1449 4th Edition approved, it is DIN-rail mountable featuring a fail-safe self-protected design, visual indicator, and a small footprint. A remote indicator option provides status to critical control circuitry. The Surge-Trap Pluggable SPD has a high short circuit rating and a thermally protected MOV, which eliminates the need for additional overcurrent protection devices.

## NEW AND IMPROVED 75KA RATING

Mersen's DIN-Rail Pluggable SPD is one of a kind - the combination of a robust 75kA surge capacity along with no requirement of backup fusing creates an offering unique to the market. Add this to the reliability and safety of Mersen's TPMOV technology and you have a truly superior product.

## RATINGS:

- **Volts ( $U_n$ ):** 120-690VAC
- **Nominal Discharge Current Rating ( $I_n$ ):** 10-20kA
- **Surge Capacity:** 75kA
- **Short-Circuit Current Rating (SCCR):** 200kA

## FEATURES/BENEFITS:

- Easy installation or retrofit
- DIN-rail mountable
- Fail-safe, self-protected design
- Remote indicator
- Visual indicator
- IP20 finger-safe design
- Small footprint
- No additional overcurrent protection devices required
- Easy to replace modules
- 2-year warranty

## APPROVALS:

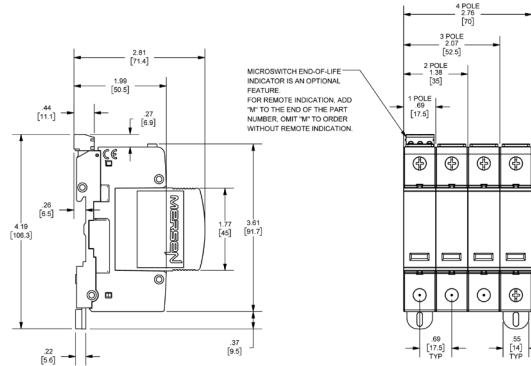
- ANSI/UL 1449 4th Edition, Type 1 Component Assembly SPD, File E210793
- ANSI/IEEE C62.41.1, C62.41.2, C62.45
- RoHS Compliant



| GENERAL PRODUCT SPECIFICATIONS                             |                             |  |         |         |                                  |   |         |           |      |                  |          |                     |                     |
|--|-----------------------------|--|---------|---------|----------------------------------|---|---------|-----------|------|------------------|----------|---------------------|---------------------|
| Mounting:  | 35mm DIN-Rail               |  |         |         | Operating & Storage Temperature: | - 40°C to + 85°C  |         |           |      |                  |          |                     |                     |
| Wire Range:  | 4-14AWG Solid / Stranded CU |  |         |         | Visual End of Life Indicator:    | RED = End of Life   |         |           |      |                  |          |                     |                     |
| Terminal Torque:   | 35.4 lbs-in                 |  |         |         | Remote End of Life Indicator:    | NO/NC Dry Contact<br>(included with "M" suffix at end of part number) |         |           |      |                  |          |                     |                     |
| Degree of Protection:                                      | IP 20                       |  |         |         | Frequency:                       | 50-60 Hz  |         |           |      |                  |          |                     |                     |
| Flammability:  | UL94 V0                     |  |         |         |                                  |   |         |           |      |                  |          |                     |                     |
| 1-POLE, SINGLE-PHASE, 2-WIRE                               |                             |  |         |         |                                  |   |         |           |      |                  |          |                     |                     |
| Catalog Number   | Nominal Voltage (VAC)       | Maximum Continuous Operating Voltage (MCOV, VAc) |         |         |                                  | Voltage Protection Rating (VPR, VAC)                                  |         |           |      | replacement plug |          | I <sub>n</sub> (kA) |                     |
|  |                             | L-N  | L-G     | N-G     | L-L                              | L-N   | L-G     | N-G       | L-L  | L-1              |          |                     |                     |
| STP120P07(M)   | 120                         | 175  | -       | -       | -                                | 600   | -       | -         | -    | SP07U175         |          | 20                  |                     |
| STP230P07(M)   | 240                         | 275  | -       | -       | -                                | 900   | -       | -         | -    | SP07U275         |          | 20                  |                     |
| STP277P07(M)   | 277                         | 320  | -       | -       | -                                | 1000  | -       | -         | -    | SP07U320         |          | 20                  |                     |
| STP347P07(M)   | 347                         | 420  | -       | -       | -                                | 1500  | -       | -         | -    | SP07U420         |          | 10                  |                     |
| 2-POLE, SPLIT-PHASE, 3-WIRE                                |                             |  |         |         |                                  |   |         |           |      |                  |          |                     |                     |
| Catalog Number   | Nominal Voltage (VAC)       | Maximum Continuous Operating Voltage (MCOV, VAc) |         |         |                                  | Voltage Protection Rating (VPR, VAC)                                  |         |           |      | replacement plug |          | I <sub>n</sub> (kA) |                     |
|  |                             | L-N  | L-G     | N-G     | L-L                              | L-N   | L-G     | N-G       | L-L  | L1, L2           |          |                     |                     |
| STP240S07(M)   | 120/240                     | 175  | -       | -       | 350                              | 600   | -       | -         | 1200 | SP07U175         |          | 20                  |                     |
| STP480S07(M)   | 240/480                     | 275  | -       | -       | 550                              | 900   | -       | -         | 1800 | SP07U275         |          | 20                  |                     |
| 3-POLE, 3-PHASE DELTA, 4-WIRE                              |                             |  |         |         |                                  |   |         |           |      |                  |          |                     |                     |
| Catalog Number   | Nominal Voltage (VAC)       | Maximum Continuous Operating Voltage (MCOV, VAc) |         |         |                                  | Voltage Protection Rating (VPR, VAC)                                  |         |           |      | replacement plug |          | I <sub>n</sub> (kA) |                     |
|  |                             | L-N  | L-G     | N-G     | L-L                              | L-N   | L-G     | N-G       | L-L  | L1, L2, L3       |          |                     |                     |
| STP240D07(M)   | 240                         | -  | 275     | -       | 550                              | -   | 900     | -         | 1800 | SP07U275         |          | 20                  |                     |
| STP480D07(M)   | 480                         | -  | 550     | -       | 1100                             | -   | 1500    | -         | 3000 | SP07U550         |          | 10                  |                     |
| 3-POLE, 3-PHASE WYE, 4-WIRE                                |                             |  |         |         |                                  |   |         |           |      |                  |          |                     |                     |
| Catalog Number   | Nominal Voltage (VAC)       | Maximum Continuous Operating Voltage (MCOV, VAc) |         |         |                                  | Voltage Protection Rating (VPR, VAC)                                  |         |           |      | replacement plug |          | I <sub>n</sub> (kA) |                     |
|  |                             | L-N  | L-G     | N-G     | L-L                              | L-N   | L-G     | N-G       | L-L  | L1, L2, L3       |          |                     |                     |
| STP208Y07(M)   | 120/208                     | 175  | -       | -       | 350                              | 600   | -       | -         | 1200 | SP07U175         |          | 20                  |                     |
| STP480Y07(M)   | 277/480                     | 320  | -       | -       | 640                              | 1000  | -       | -         | 2000 | SP07U320         |          | 20                  |                     |
| STP600Y07(M)   | 347/600                     | 420  | -       | -       | 840                              | 1500  | -       | -         | 2500 | SP07U420         |          | 10                  |                     |
| STP690Y07(M)   | 400/690                     | 550  | -       | -       | 1100                             | 1500  | -       | -         | 3000 | SP07U550         |          | 10                  |                     |
| 4-POLE, 3-PHASE WYE, 5-WIRE, INCLUDING N-G MODE            |                             |  |         |         |                                  |   |         |           |      |                  |          |                     |                     |
| Catalog Number   | Nominal Voltage (VAC)       | Maximum Continuous Operating Voltage (MCOV, VAc) |         |         |                                  | Voltage Protection Rating (VPR, VAC)                                  |         |           |      | replacement plug |          | I <sub>n</sub> (kA) |                     |
|  |                             | L-N  | L-G     | N-G     | L-L                              | L-N   | L-G     | N-G       | L-L  | L1, L2, L3       | N-G      |                     |                     |
| STP208YN07(M)  | 120/208                     | 175  | 175     | 175     | 350                              | 600   | 1200    | 600       | 1200 | SP07U175         | SP07U175 | 20                  |                     |
| STP480YN07(M)  | 277/480                     | 320  | 495     | 175     | 640                              | 1000  | 1500    | 600       | 2000 | SP07U320         | SP07U175 | 20                  |                     |
| STP600YN07(M)  | 347/600                     | 420  | 695     | 275     | 840                              | 1500  | 2000    | 800       | 2500 | SP07U420         | SP07U275 | 10                  |                     |
| STP690YN07(M)  | 400/690                     | 550  | 870     | 320     | 1100                             | 1500  | 2500    | 1000      | 3000 | SP07U550         | SP07U320 | 10                  |                     |
| 4-POLE, 3-PHASE DELTA HIGH-LEG, 5-WIRE, INCLUDING N-G MODE |                             |  |         |         |                                  |   |         |           |      |                  |          |                     |                     |
| Catalog Number   | Nominal Voltage (VAC)       | Maximum Continuous Operating Voltage (MCOV, VAc) |         |         |                                  | Voltage Protection Rating (VPR, VAC)                                  |         |           |      | replacement plug |          |                     | I <sub>n</sub> (kA) |
|  |                             | L-L/L-G  | L-N/N-G | H-L/H-G | H-N                              | L-L/L-G   | L-N/N-G | H-L/H-G   | H-N  | L1, L3           | L2       | N-G                 |                     |
| STP240HN07(M)  | 120/240                     | 350  | 175     | 450     | 275                              | 1200  | 600     | 1500      | 800  | SP07U175         | SP07U275 | SP07U175            | 20                  |
| STP480HN07(M)  | 240/480                     | 550/450  | 275/175 | 825/725 | 550                              | 1500  | 800/600 | 2500/2000 | 1500 | SP07U275         | SP07U550 | SP07U175            | 10                  |

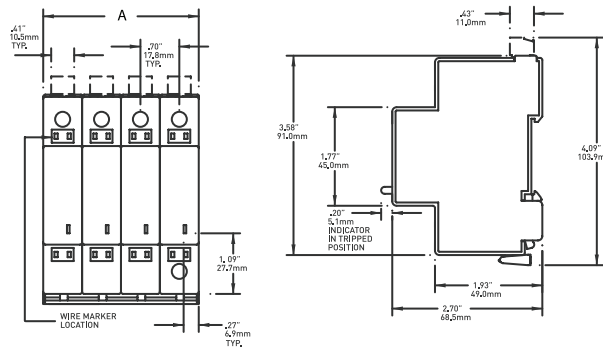
### DIMENSIONS - STP SERIES

| poles  | a    |      |
|--------|------|------|
|        | IN   | MM   |
| 1 Pole | 0.69 | 17.5 |
| 2 Pole | 1.38 | 35   |
| 3 Pole | 2.07 | 52.5 |
| 4 Pole | 2.76 | 70   |

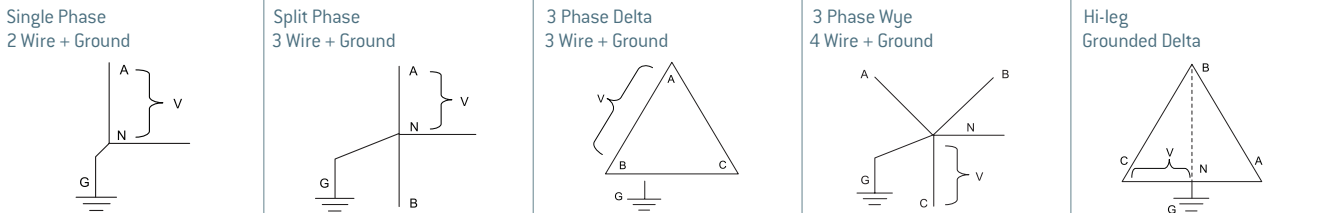
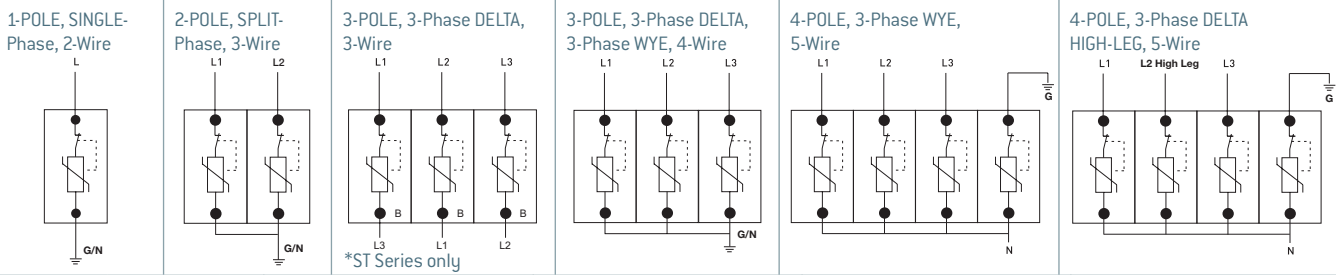


### DIMENSIONS - ST SERIES

| poles  | a    |      |
|--------|------|------|
|        | IN   | MM   |
| 1 Pole | 0.7  | 17.8 |
| 2 Pole | 1.39 | 35.5 |
| 3 Pole | 2.1  | 53.3 |
| 4 Pole | 2.8  | 71   |



### WIRING DIAGRAMS



### REMOTE STATUS INDICATOR

|                  |  |                         |                                |
|------------------|--|-------------------------|--------------------------------|
| ST Series        |  | Signal Wire Range       | #16 to #30 AWG                 |
| STP Series       |  | Terminal Torque         | 2.2 lb-in                      |
|                  |  | Cont. between Comm + NO | Product Offline, Not Protected |
|                  |  | Cont. between Comm + NC | Product Online, Protected      |
| 125 VAC - 3A max |  |                         |                                |

**ST and STP Series:** for remote indication, add "M" to the end of the catalog number. For example, ST4803PYGM.

# Surge-Trap<sup>®</sup> Pluggable STP-50 Series

Surge-Trap

## SURGE PROTECTIVE DEVICE

### DIN-RAIL PLUGGABLE SPD 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<sup>®</sup> 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 (Imax)              | 50kA   |
| Nominal discharge current (In) (8x20 μs) | 10 – 20kA  |
| Short Circuit Current Rating (SCCR)      | 200kA  |
| Nominal power frequency                  | 50-60 Hz   |
| Mounting                                 | 35mm DIN-Rail  |
| Wire Range                               | 4 - 14AWG (25mm <sup>2</sup> – 2.5mm <sup>2</sup> )<br>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

- Mersen TPMOV Technology – does not require additional overcurrent protection
- 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 <sub>n</sub> (kA) | 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 | L-1               |
| STP120P05M     | 120V Single Phase            | 20                  | 175  | -   | -   | -   | 600                                  | -   | -   | -   | SP05U175          |
| STP230P05M     | 240V Single Phase            | 20                  | 275  | -   | -   | -   | 900                                  | -   | -   | -   | SP05U275          |
| STP277P05M     | 277V Single Phase            | 20                  | 320  | -   | -   | -   | 1000                                 | -   | -   | -   | SP05U320          |
| STP347P05M     | 347V Single Phase            | 10                  | 420  | -   | -   | -   | 1500                                 | -   | -   | -   | SP05U420          |

### 2 Poles - 3 Wires

| Catalog Number | Nominal System Voltage (VAC) | I <sub>n</sub> (kA) | 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            |
| STP120PN05M    | 120V Single Phase            | 20                  | 175  | -   | -   | 350 | 600                                  | 1200 | 1200 | -    | SP05U175          |
| STP240S05M     | 240/120V Split Phase         | 20                  | 175  | -   | -   | 350 | 600                                  | -    | -    | 1200 | SP05U175          |
| STP480S05M     | 480/240V Split Phase         | 20                  | 275  | -   | -   | 550 | 900                                  | -    | -    | 1800 | SP05U275          |

### 3 Poles - 4 Wires

| Catalog Number | Nominal System Voltage (VAC) | I <sub>n</sub> (kA) | 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        |
| STP240SN05M    | 120/240 - Split Phase        | 20                  | 175  | -   | 175 | 350  | 600                                  | 1200 | 1200 | 1200 | SP05U175          |
| STP208Y05M     | 208/120V 3-Phase Wye         | 20                  | 175  | -   | -   | 350  | 600                                  | -    | -    | 1200 | SP05U175          |
| STP480Y05M     | 480/277V 3-Phase Wye         | 20                  | 320  | -   | -   | 640  | 1000                                 | -    | -    | 2000 | SP05U320          |
| STP600Y05M     | 600/347V 3-Phase Wye         | 10                  | 420  | -   | -   | 840  | 1500                                 | -    | -    | 2500 | SP05U420          |
| STP690Y05M     | 690/400V 3-Phase Wye         | 10                  | 550  | -   | -   | 1100 | 1500                                 | -    | -    | 3000 | SP05U550          |
| STP240D05M     | 240V 3-Phase Delta           | 20                  | -  | 275 | -   | 550  | -                                    | 900  | -    | 1800 | SP05U275          |
| STP480D05M     | 480V 3-Phase Delta           | 10                  | -  | 550 | -   | 1100 | -                                    | 1500 | -    | 3000 | SP05U550          |

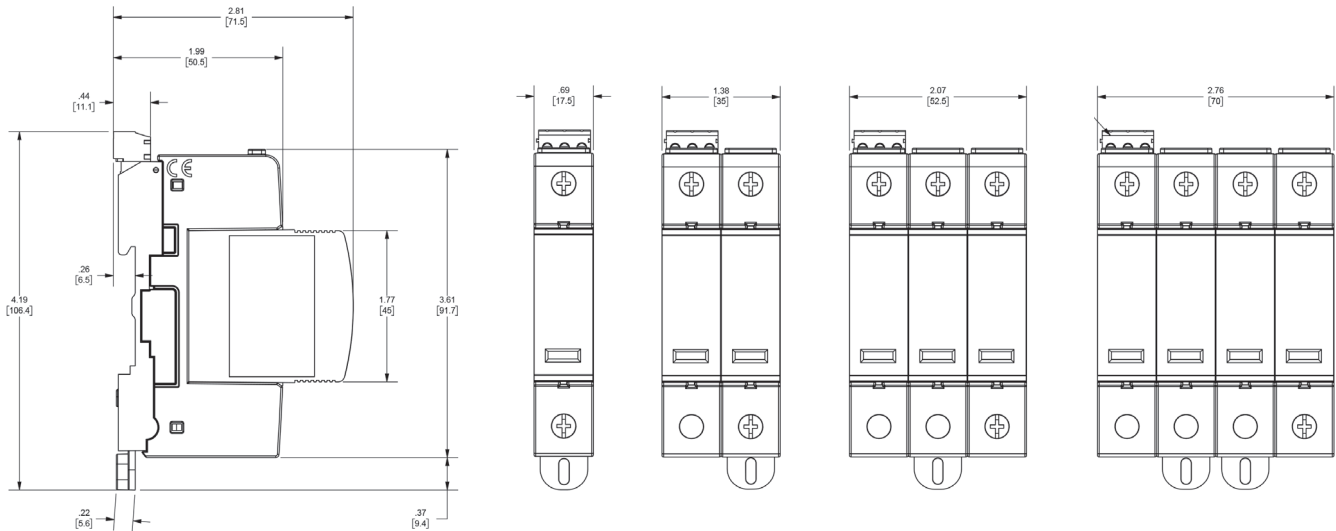
### 4 Poles - 5 Wires

| Catalog Number | Nominal System Voltage (VAC) | I <sub>n</sub> (kA) | 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                  | 175  | 175     | 175     | 350  | 600                                  | 1200      | 600         | 1200 | SP05U175          |          |
| STP480YN05M    | 480/277V 3-Phase Wye         | 20                  | 320  | 495     | 175     | 640  | 1000                                 | 1500      | 1000        | 2000 | L1,2,3            | SP05U320 |
|                |                              |                     |  |         |         |      |                                      |           |             |      | N-G               | SP05U175 |
| STP600YN05M    | 600/347V 3-Phase Wye         | 10                  | 420  | 695     | 275     | 840  | 1500                                 | 2000      | 800         | 2500 | L1,2,3            | SP05U420 |
|                |                              |                     |  |         |         |      |                                      |           |             |      | N-G               | SP05U275 |
| STP690YN05M    | 690/400V 3-Phase Wye         | 10                  | 550  | 870     | 320     | 1100 | 1500                                 | 2500      | 1000        | 3000 | L1,2,3            | SP05U550 |
|                |                              |                     |  |         |         |      |                                      |           |             |      | N-G               | SP05U320 |
| STP240HN05M    | 240/120V Hi-Leg Delta        | 20                  | 350  | 175     | 450     | 275  | 1200                                 | 600       | 1500        | 800  | L1,3              | SP05U175 |
|                |                              |                     |  |         |         |      |                                      |           |             |      | L2                | SP05U275 |
|                |                              |                     |  |         |         |      |                                      |           |             |      | N-G               | SP05U175 |
| STP480HN05M    | 480/240V Hi-Leg Delta        | 10                  | 550/450  | 275/175 | 825/725 | 550  | 1500                                 | 800 / 600 | 2500 / 2000 | 1500 | L1,3              | SP05U275 |
|                |                              |                     |  |         |         |      |                                      |           |             |      | L2                | SP05U550 |
|                |                              |                     |  |         |         |      |                                      |           |             |      | N-G               | SP05U175 |

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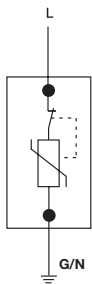


## PRODUCT DIMENSIONS

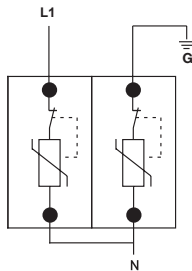


## WIRING DIAGRAMS

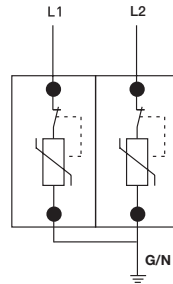
Single Phase  
1 Pole - 2 Wire



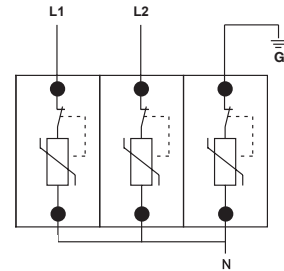
Single Phase  
2 Pole - 3 Wire



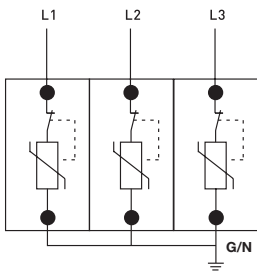
Split Phase  
2 Pole - 3 Wire



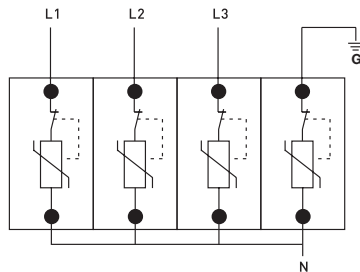
Split Phase  
3 Pole - 4 Wire



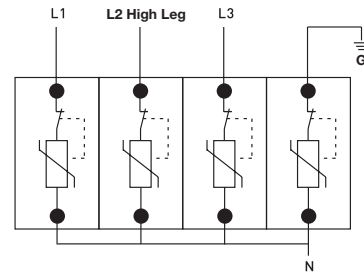
3 Phase Delta / 3 Phase Wye  
3 Pole - 4 Wire



3 Phase Wye  
4 Pole - 5 Wire

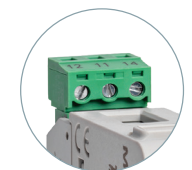
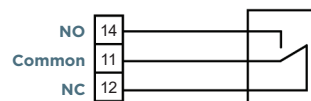


3 Phase Delta High-Leg  
4 Pole - 5 Wire



## REMOTE STATUS INDICATOR SPECIFICATIONS

| REMOTE STATUS INDICATOR SPECIFICATION |  |
|---------------------------------------|--|
| Signal Wire Range                     | #16 to #30 AWG (1.5 mm <sup>2</sup> – 0.05 mm <sup>2</sup> ) |
| 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.

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# Surge-Trap<sup>®</sup> Monobloc STET23 Series - 20kA with EMI Filter

**SURGE PROTECTION FOR POWER LINES**

DIN-RAIL IEC TYPE 2+3 / CLASS II+III



STE T23 20 is the series of combined Type 2+3/Class II+III devices for discharging voltage surges while providing a very fine voltage protection level, in accordance with EN/IEC 61643-11. Complete with a built-in powerful EMI filter. Suitable as the final stage of protection in installations with electromagnetic disturbances which might interrupt, degrade or limit system performance. Series connection for applications up to 20A rated current.

## TECHNICAL DATA OVERVIEW

|                                     |                         |
|-------------------------------------|-------------------------|
| Class                               | Type 2+3 / Class II+III |
| $U_n$                               | 120V, 230V              |
| $I_{max}$                           | 20 kA                   |
| $I_n (8/20)$                        | 10 kA                   |
| Combined discharge voltage $U_{oc}$ | 6 kV                    |
| Body Material                       | PC+GF; V-0              |
| Number of Poles                     | 2                       |
| $I_{cc}$                            | 10 kA                   |
| IL                                  | 20 A                    |
| Back-up fuse                        | 20 A gG                 |
| Response Time                       | 25 ns                   |
| EMI filter common mode              | < 82 db                 |
| EMI filter differential mode        | < 74 db                 |

## FEATURES & BENEFITS

- Maximum discharge current (8/20 $\mu$ s): 20kA
- Nominal discharge current (8/20 $\mu$ s): 10kA
- Combined voltage pulse (1.2/50 $\mu$ s): 6kV
- Filter attenuation up to 82dB (common mode)
- Rated current load (IL): 20A
- Single phase TT and TNS networks
- $U_n$ : 120V, 230V
- DIN-rail mountable, monobloc format
- Visual (LED) and remote end of life indicators
- Power status (LED) indicator
- Back-up fuse: 20 A gG

## APPLICATIONS

- Industry and automation
- Commercial and residential installations
- Telecom & IT & Data Centers
- Water treatment

## STANDARDS

- IEC 61643-11
- EN 61643-11



# Surge-Trap® Monobloc STET23 Series - 20kA with EMI Filter

## PRODUCT RANGE



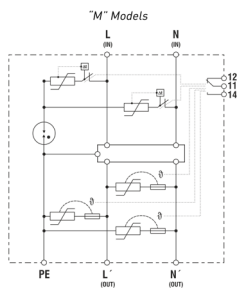
STET23-20K275V-SPM

### 2 Poles

| Catalog number        | Item number | $U_n$   | $U_c$ | $I_{max}$ (8/20) | $I_n$ (8/20) | $U_p$ at $I_n$ | IL   | Remote |
|-----------------------|-------------|---------|-------|------------------|--------------|----------------|------|--------|
| <b>TT/TNS (1Ph+N)</b> |             |         |       |                  |              |                |      |        |
| STET23-20K150V-SPM    | 83230401    | 120 VAC | 150 V | 20 kA            | 10 kA        | $\leq 0.8$ kV  | 20 A | Yes    |
| STET23-20K275V-SPM    | 83230403    | 230 VAC | 275 V | 20 kA            | 10 kA        | $\leq 1.2$ kV  | 20 A | Yes    |

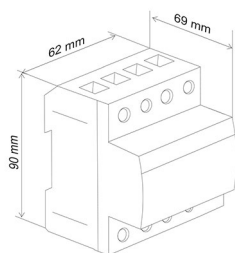
## ELECTRICAL DIAGRAMS

### TT/TNS (1Ph+N)



## DIMENSIONS

### 2 Poles



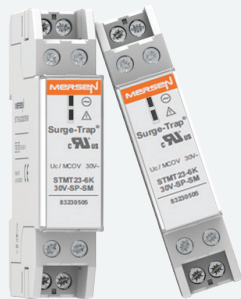
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# Surge-Trap<sup>®</sup> STMT23 Series

Surge Protection for Power Lines

## SURGE PROTECTIVE DEVICE

## LOW VOLTAGE SPD FOR AC/DC VOLTAGE CONTROL AND POWER APPLICATIONS



Mersen's Surge Trap STMT Series features low voltage surge protective devices suitable for both AC and DC voltage applications. UL 1449 4th Edition approved, this series is ideal for the protection of controls, power supplies, communication systems, and other sensitive equipment. With a slim design, these DIN-rail mount SPDs are ideal for limited space applications. The series is suitable for operating voltages of 12-230 VAC and 24-365 VDC and offers an optional dry contact feature for remote monitoring.

## FEATURES AND BENEFITS:

- Maximum discharge current (8/20 $\mu$ s): 6kA - 20kA
- Nominal discharge current (8/20 $\mu$ s): 3kA - 10kA
- Combined voltage pulse (1.2/50 $\mu$ s): 10kV, 6kV
- Single phase networks
- Un: 12V, 24V, 48V, 60V, 120V, 230V
- Typically for use also in the corresponding DC voltages
- DIN-rail mountable, monobloc format
- Visual (LED) and remote end of life indicators
- Power status (LED) indicator
- Space saving "slim" format
- Back-up fuse IEC: 63A gG; UL: 30A CC (ATMR30)

## APPLICATIONS

- Industry and automation controls
- Commercial and residential installations
- Telecom & IT & Data Centers
- LED outdoor lighting
- Water treatment

## RATINGS:

- **Volts ( $U_n$ ):** 24-365VAC
- **Nominal Discharge Current Rating ( $I_n$ ):** 3-10kA
- **Surge Capacity ( $I_{max}$ ):** 6-20kA

## APPROVALS:

- UL 1449 4th Edition (Type 4 CA)
- IEC/EN 61643-11
- CSA C22.2 (Type 4 CA)



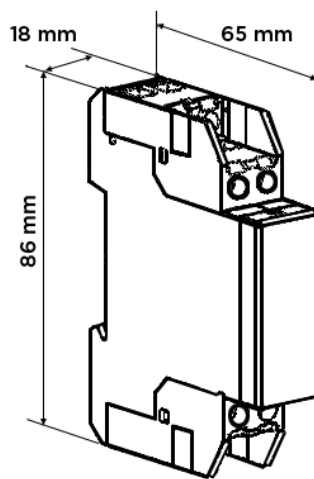
\* Agency information not applicable to DC ratings

| Catalog Number | Reference number     | Nominal Voltage | Maximum Continuous Operating Voltage (MCOV) | $I_{max}$ (8/20) | $I_n$ (8/20) | Voltage Protection Level  | $U_p$ at $I_n$            | Remote Monitoring? |
|----------------|----------------------|-----------------|---|------------------|--------------|---------------------------|---------------------------|--------------------|
| 83230500       | STMT23-6K20V-SP-S    | 12 V            | 20 VAC                                      | 6 kA             | 3 kA         | $\leq 0.22$ kV (L1-L2)    | $\leq 0.22$ kV (L1-L2)    | No                 |
|                |                      |                 | 25 VDC                                      |                  |              | $\leq 0.67$ kV (L1/L2-PE) | $\leq 0.70$ kV (L1/L2-PE) |                    |
| 83230501       | STMT23-6K20V-SP-SM   | 12 V            | 20 VAC                                      | 6 kA             | 3 kA         | $\leq 0.22$ kV (L1-L2)    | $\leq 0.22$ kV (L1-L2)    | Yes                |
|                |                      |                 | 25 VDC                                      |                  |              | $\leq 0.67$ kV (L1/L2-PE) | $\leq 0.70$ kV (L1/L2-PE) |                    |
| 83230504       | STMT23-6K30V-SP-S    | 24 V            | 30 VAC                                      | 6 kA             | 3 kA         | $\leq 0.26$ kV (L1-L2)    | $\leq 0.22$ kV (L1-L2)    | No                 |
|                |                      |                 | 36 VDC                                      |                  |              | $\leq 0.78$ kV (L1/L2-PE) | $\leq 0.70$ kV (L1/L2-PE) |                    |
| 83230505       | STMT23-6K30V-SP-SM   | 24 V            | 30 VAC                                      | 6 kA             | 3 kA         | $\leq 0.26$ kV (L1-L2)    | $\leq 0.22$ kV (L1-L2)    | Yes                |
|                |                      |                 | 36 VDC                                      |                  |              | $\leq 0.78$ kV (L1/L2-PE) | $\leq 0.70$ kV (L1/L2-PE) |                    |
| 83230506       | STMT23-6K60V-SP-S    | 48 V            | 60 VAC                                      | 6 kA             | 3 kA         | $\leq 0.48$ kV (L1-L2)    | $\leq 0.33$ kV (L1-L2)    | No                 |
|                |                      |                 | 77 VDC                                      |                  |              | $\leq 0.93$ kV (L1/L2-PE) | $\leq 0.70$ kV (L1/L2-PE) |                    |
| 83230507       | STMT23-6K60V-SP-SM   | 48 V            | 60 VAC                                      | 6 kA             | 3 kA         | $\leq 0.48$ kV (L1-L2)    | $\leq 0.33$ kV (L1-L2)    | Yes                |
|                |                      |                 | 77 VDC                                      |                  |              | $\leq 0.93$ kV (L1/L2-PE) | $\leq 0.70$ kV (L1/L2-PE) |                    |
| 83230508       | STMT23-6K75V-SP-S    | 60 V            | 75 VAC                                      | 6 kA             | 3 kA         | $\leq 0.48$ kV (L1-L2)    | $\leq 0.50$ kV (L1-L2)    | No                 |
|                |                      |                 | 100 VDC                                     |                  |              | $\leq 0.93$ kV (L1/L2-PE) | $\leq 0.90$ kV (L1/L2-PE) |                    |
| 83230509       | STMT23-6K75V-SP-SM   | 60 V            | 75 VAC                                      | 6 kA             | 3 kA         | $\leq 0.48$ kV (L1-L2)    | $\leq 0.50$ kV (L1-L2)    | Yes                |
|                |                      |                 | 100 VDC                                     |                  |              | $\leq 0.93$ kV (L1/L2-PE) | $\leq 0.90$ kV (L1/L2-PE) |                    |
| 83230502       | STMT23-6K150V-SP-S   | 120 V           | 150 VAC                                     | 6 kA             | 3 kA         | $\leq 0.61$ kV (L1-L2)    | $\leq 0.70$ kV (L1-L2)    | No                 |
|                |                      |                 | 200 VDC                                     |                  |              | $\leq 1.03$ kV (L1/L2-PE) | $\leq 0.90$ kV (L1/L2-PE) |                    |
| 83230503       | STMT23-6K150V-SP-SM  | 120 V           | 150 VAC                                     | 6 kA             | 3 kA         | $\leq 0.61$ kV (L1-L2)    | $\leq 0.70$ kV (L1-L2)    | Yes                |
|                |                      |                 | 200 VDC                                     |                  |              | $\leq 1.03$ kV (L1/L2-PE) | $\leq 0.90$ kV (L1/L2-PE) |                    |
| 83230510       | STMT23-20K275V-SP-S  | 240 V           | 275 VAC                                     | 20 kA            | 10 kA        | $\leq 0.96$ kV (L1-L2)    | $\leq 1.40$ kV (L1-L2)    | No                 |
|                |                      |                 | 365 VDC                                     |                  |              | $\leq 1.04$ kV (L1/L2-PE) | $\leq 1.40$ kV (L1/L2-PE) |                    |
| 83230511       | STMT23-20K275V-SP-SM | 240 V           | 275 VAC                                     | 20 kA            | 10 kA        | $\leq 0.96$ kV (L1-L2)    | $\leq 1.40$ kV (L1-L2)    | Yes                |
|                |                      |                 | 365 VDC                                     |                  |              | $\leq 1.04$ kV (L1/L2-PE) | $\leq 1.40$ kV (L1/L2-PE) |                    |

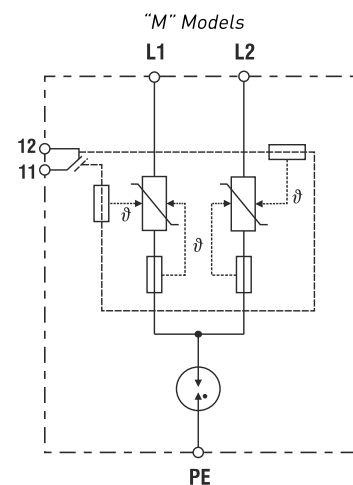
**TECHNICAL DATA  
OVERVIEW**

|                       |                                      |
|-----------------------|--------------------------------------|
| Class                 | IEC: Type 2+3 /<br>UL: Type 4 CA     |
| $U_n$                 | 12V, 24V, 48V, 60V,<br>120V, 230V    |
| $I_n$ Range           | 6 – 20 kA                            |
| $I_{max}$ Range       | 3 – 10 kA                            |
| Body Material         | PC+GF; V-0                           |
| Format                | Slim monobloc                        |
| Backup fuse           | IEC: 63A gG /<br>UL: 30A CC (ATMR30) |
| $U_{oc}$ Range        | 6 – 10 kV                            |
| Response Time         | 25 ns                                |
| Number of Poles       | 2                                    |
| IP Code               | 20                                   |
| Product Warranty      | 2 years                              |
| Operating temperature | -40 ... 80 °C                        |
| Wire Gauge Range      | 1,5 ... 6 mm <sup>2</sup>            |

**DIMENSIONS**



**ELECTRICAL  
DIAGRAM**



# Surge-Trap<sup>®</sup> Pluggable STPT23 Series - 20kA

**SURGE PROTECTION FOR POWER LINES**

DIN-RAIL IEC TYPE 2+3 / CLASS II+III



STP T23 20 is the series of combined Type 2+3/Class II+III devices for discharging voltage surges while providing a very fine voltage protection level, in accordance with EN/IEC 61643-11. Suitable as the final stage of protection in panels with Type 2 protection devices installed upstream such as STP T2 40 SPDs. These SPDs should be installed as close as possible to the equipment being protected.

## TECHNICAL DATA OVERVIEW

|                                     |                              |
|-------------------------------------|------------------------------|
| Class                               | Type 2+3 / Class II+III      |
| $U_n$                               | 120/208V, 230/400V, 277/480V |
| $I_{max}$                           | 20 kA                        |
| $I_n (8/20)$                        | 10 kA                        |
| $I_{sc cr}$                         | 25 kA                        |
| Combined discharge voltage $U_{oc}$ | 10 kV                        |
| Body Material                       | PA66 CT1; V-0                |
| System type                         | TT, TNS, TNC, IT             |
| Number of Poles                     | 1,2,3,4                      |
| Format                              | Pluggable                    |
| IP Code                             | 20                           |
| Back-up fuse                        | 63 A gG                      |
| Stranded wire Section               | 6 ... 25 mm <sup>2</sup>     |
| Rigid wire Section                  | 6 ... 35 mm <sup>2</sup>     |
| Response Time                       | 25 ns                        |
| EMI filter differential mode        | < 0 db                       |

## FEATURES & BENEFITS

- Maximum discharge current (8/20 $\mu$ s): 20kA per phase
- Nominal discharge current (8/20 $\mu$ s): 10kA per phase
- Combined voltage pulse  $U_{oc}$  (1.2/50 $\mu$ s): 10kV
- TNS, TNC, TT and IT networks
- $U_n(L-N/L-L)$ : 120/208V, 230/400V, 277/480V and 400/690V
- PLC friendly solutions (LCF) for Power Line Communications
- DIN-rail mountable, plug-in format
- 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
- Back-up fuse: 63 A gG

## APPLICATIONS

- Industry and automation
- Commercial and residential installations
- Telecom & IT & Data Centers
- LED outdoor lighting
- Water treatment
- Smart grid & LV Metering
- Photovoltaic & wind

## STANDARDS

- IEC 61643-11
- EN 61643-11



# Surge-Trap® Pluggable STPT23 Series - 20kA

## PRODUCT RANGE



STPT23-20K320V-1PM

### 1 Pole

| Catalog number     | Item number | U <sub>n</sub>     | U <sub>c</sub> | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>oc</sub> | U <sub>p</sub> at I <sub>n</sub> | Remote | Cartridge No |            |
|--------------------|-------------|--------------------|----------------|-------------------------|-----------------------|-----------------|----------------------------------|--------|--------------|------------|
|                    |             |                    |                |                         |                       |                 |                                  |        | L-N          | N-PE       |
| <b>L-N (1Ph)</b>   |             |                    |                |                         |                       |                 |                                  |        |              |            |
| STPT23-20K150V-1P  | 83230100    | 120 VAC            | 150 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 0.8 kV                         | No     | SP23-20K150V | -          |
| STPT23-20K150V-1PM | 83230101    | 120 VAC            | 150 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 0.8 kV                         | Yes    | SP23-20K150V | -          |
| STPT23-20K320V-1P  | 83230102    | 230 VAC<br>277 VAC | 320 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.4 kV                         | No     | SP23-20K320V | -          |
| STPT23-20K320V-1PM | 83230103    | 230 VAC<br>277 VAC | 320 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.4 kV                         | Yes    | SP23-20K320V | -          |
| <b>N-PE (N)</b>    |             |                    |                |                         |                       |                 |                                  |        |              |            |
| STPT23-20K-N       | 83230106    | Neutral            | 255 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.5 kV                         | No     | -            | SP23-20K-N |



STPT23-20K320V-2PM

### 2 Poles

| Catalog number         | Item number | U <sub>n</sub>     | U <sub>c</sub> | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>oc</sub> | U <sub>p</sub> at I <sub>n</sub>  | Remote | Cartridge No    |            |
|------------------------|-------------|--------------------|----------------|-------------------------|-----------------------|-----------------|-----------------------------------|--------|-----------------|------------|
|                        |             |                    |                |                         |                       |                 |                                   |        | L-N             | N-PE       |
| <b>TT (1Ph+N)</b>      |             |                    |                |                         |                       |                 |                                   |        |                 |            |
| STPT23-20K150V-2PG     | 83230108    | 120 VAC            | 150 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 0.8 kV (L-N)<br>≤ 1.5 kV (N-PE) | No     | SP23-20K150V    | SP23-20K-N |
| STPT23-20K150V-2PGM    | 83230109    | 120 VAC            | 150 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 0.8 kV (L-N)<br>≤ 1.5 kV (N-PE) | Yes    | SP23-20K150V    | SP23-20K-N |
| STPT23-20K275V-2PG-LF  | 83230110    | 230 VAC            | 275 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.5 kV (L-N)<br>≤ 1.5 kV (N-PE) | No     | SP23-20K275V-LF | SP23-20K-N |
| STPT23-20K275V-2PG-LFM | 83230111    | 230 VAC            | 275 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.5 kV (L-N)<br>≤ 1.5 kV (N-PE) | Yes    | SP23-20K275V-LF | SP23-20K-N |
| STPT23-20K320V-2PG     | 83230112    | 230 VAC<br>277 VAC | 320 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.4 kV (L-N)<br>≤ 1.5 kV (N-PE) | No     | SP23-20K320V    | SP23-20K-N |
| STPT23-20K320V-2PGM    | 83230113    | 230 VAC<br>277 VAC | 320 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.4 kV (L-N)<br>≤ 1.5 kV (N-PE) | Yes    | SP23-20K320V    | SP23-20K-N |
| <b>TNS (1Ph+N)</b>     |             |                    |                |                         |                       |                 |                                   |        |                 |            |
| STPT23-20K150V-2P      | 83230114    | 120 VAC            | 150 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 0.8 kV                          | No     | SP23-20K150V    | -          |
| STPT23-20K150V-2PM     | 83230115    | 120 VAC            | 150 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 0.8 kV                          | Yes    | SP23-20K150V    | -          |
| STPT23-20K275V-2P-LF   | 83230134    | 230 VAC            | 275 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.5 kV                          | No     | SP23-20K275V-LF | -          |
| STPT23-20K275V-2P-LFM  | 83230135    | 230 VAC            | 275 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.5 kV                          | Yes    | SP23-20K275V-LF | -          |
| STPT23-20K320V-2P      | 83230116    | 230 VAC<br>277 VAC | 320 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.4 kV                          | No     | SP23-20K320V    | -          |
| STPT23-20K320V-2PM     | 83230117    | 230 VAC<br>277 VAC | 320 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.4 kV                          | Yes    | SP23-20K320V    | -          |

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# Surge-Trap® Pluggable STPT23 Series - 20kA

## PRODUCT RANGE



STPT23-20K320V-3PM

### 3 Poles

| Catalog number        | Item number | U <sub>n</sub>                 | U <sub>c</sub> | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>oc</sub> | U <sub>p</sub> at I <sub>n</sub> | Remote | Cartridge No    |  |
|-----------------------|-------------|--------------------------------|----------------|-------------------------|-----------------------|-----------------|----------------------------------|--------|-----------------|--|
|                       |             |                                |                |                         |                       |                 |                                  |        | L-N             |  |
| <b>TNC (3Ph)</b>      |             |                                |                |                         |                       |                 |                                  |        |                 |  |
| STPT23-20K150V-3P     | 83230118    | 120 / 208 VAC                  | 150 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 0.8 kV                         | No     | SP23-20K150V    |  |
| STPT23-20K150V-3PM    | 83230119    | 120 / 208 VAC                  | 150 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 0.8 kV                         | Yes    | SP23-20K150V    |  |
| STPT23-20K275V-3P-LF  | 83230120    | 230 / 400 VAC                  | 275 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.5 kV                         | No     | SP23-20K275V-LF |  |
| STPT23-20K275V-3P-LFM | 83230121    | 230 / 400 VAC                  | 275 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.5 kV                         | Yes    | SP23-20K275V-LF |  |
| STPT23-20K320V-3P     | 83230122    | 230 / 400 VAC<br>277 / 480 VAC | 320 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.4 kV                         | No     | SP23-20K320V    |  |
| STPT23-20K320V-3PM    | 83230123    | 230 / 400 VAC<br>277 / 480 VAC | 320 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.4 kV                         | Yes    | SP23-20K320V    |  |



STPT23-20K320V-4PM

### 4 Poles

| Catalog number         | Item number | U <sub>n</sub>             | U <sub>c</sub> | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>oc</sub> | U <sub>p</sub> at I <sub>n</sub>  | Remote | Cartridge No    |            |
|------------------------|-------------|----------------------------|----------------|-------------------------|-----------------------|-----------------|-----------------------------------|--------|-----------------|------------|
|                        |             |                            |                |                         |                       |                 |                                   |        | L-N             | N-PE       |
| <b>TT (3Ph+N)</b>      |             |                            |                |                         |                       |                 |                                   |        |                 |            |
| STPT23-20K150V-4PG     | 83230124    | 120/208 VAC                | 150 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 0.8 kV (L-N)<br>≤ 1.5 kV (N-PE) | No     | SP23-20K150V    | SP23-20K-N |
| STPT23-20K150V-4PGM    | 83230125    | 120/208 VAC                | 150 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 0.8 kV (L-N)<br>≤ 1.5 kV (N-PE) | Yes    | SP23-20K150V    | SP23-20K-N |
| STPT23-20K275V-4PG-LF  | 83230126    | 230/400 VAC                | 275 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.5 kV (L-N)<br>≤ 1.5 kV (N-PE) | No     | SP23-20K275V-LF | SP23-20K-N |
| STPT23-20K275V-4PG-LFM | 83230127    | 230/400 VAC                | 275 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.5 kV (L-N)<br>≤ 1.5 kV (N-PE) | Yes    | SP23-20K275V-LF | SP23-20K-N |
| STPT23-20K320V-4PG     | 83230128    | 230/400 VAC<br>277/400 VAC | 320 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.4 kV (L-N)<br>≤ 1.5 kV (N-PE) | No     | SP23-20K320V    | SP23-20K-N |
| STPT23-20K320V-4PGM    | 83230129    | 230/400 VAC<br>277/400 VAC | 320 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.4 kV (L-N)<br>≤ 1.5 kV (N-PE) | Yes    | SP23-20K320V    | SP23-20K-N |
| <b>TNS (3Ph+N)</b>     |             |                            |                |                         |                       |                 |                                   |        |                 |            |
| STPT23-20K150V-4P      | 83230130    | 120/208 VAC                | 150 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 0.8 kV                          | No     | SP23-20K150V    | -          |
| STPT23-20K150V-4PM     | 83230131    | 120/208 VAC                | 150 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 0.8 kV                          | Yes    | SP23-20K150V    | -          |
| STPT23-20K275V-4P-LF   | 83230136    | 230/400 VAC                | 275 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.5 kV                          | No     | SP23-20K275V-LF | -          |
| STPT23-20K275V-4P-LFM  | 83230137    | 230/400 VAC                | 275 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.5 kV                          | Yes    | SP23-20K275V-LF | -          |
| STPT23-20K320V-4P      | 83230132    | 230/400 VAC<br>277/400 VAC | 320 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.4 kV                          | No     | SP23-20K320V    | -          |
| STPT23-20K320V-4PM     | 83230133    | 230/400 VAC<br>277/400 VAC | 320 V          | 20 kA                   | 10 kA                 | 10 kV           | ≤ 1.4 kV                          | Yes    | SP23-20K320V    | -          |

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# Surge-Trap® Pluggable STPT23 Series - 20kA

## PRODUCT RANGE



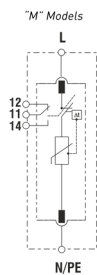
SP23-20K320V

### Replacement cartridges

| Catalog number  | Item number | $U_n$              | $U_c$ | $I_{max}$ (8/20) | $I_n$ (8/20) | $U_{oc}$ | $U_p$ at $I_n$ |
|-----------------|-------------|--------------------|-------|------------------|--------------|----------|----------------|
| <b>L-N</b>      |             |                    |       |                  |              |          |                |
| SP23-20K150V    | 83230001    | 120 VAC            | 150 V | 20 kA            | 10 kA        | 10 kV    | $\leq 0.8$ kV  |
| SP23-20K275V-LF | 83230003    | 230 VAC            | 275 V | 20 kA            | 10 kA        | 10 kV    | $\leq 1.5$ kV  |
| SP23-20K320V    | 83230002    | 230 VAC<br>277 VAC | 320 V | 20 kA            | 10 kA        | 10 kV    | $\leq 1.4$ kV  |
| <b>N-PE</b>     |             |                    |       |                  |              |          |                |
| SP23-20K-N      | 83230000    | Neutral            | 255 V | 20 kA            | 10 kA        | 10 kV    | $\leq 1.5$ kV  |

## ELECTRICAL DIAGRAMS

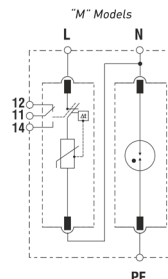
**L-N (1Ph)**



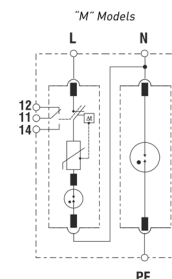
**N-PE (N)**



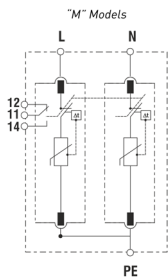
**TT (1Ph+N) - 2PG**



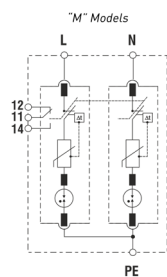
**TT LF (1Ph+N) - 2PG**



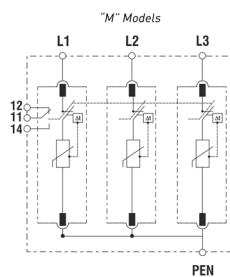
**TNS (1Ph+N) - 2P**



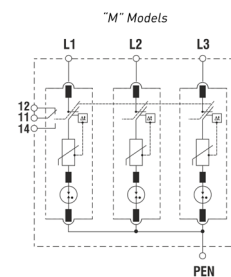
**TNS LF (1Ph+N) - 2P**



**TNC (3Ph) - 3P**



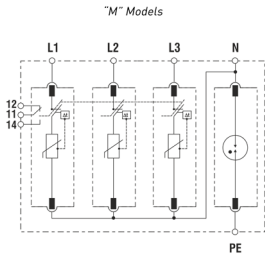
**TNC LF (3Ph) - 3P**



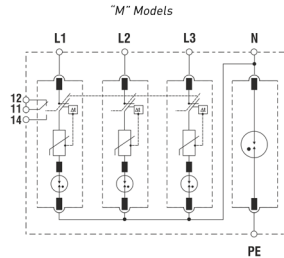
# Surge-Trap<sup>®</sup> Pluggable STPT23 Series - 20kA

## ELECTRICAL DIAGRAMS

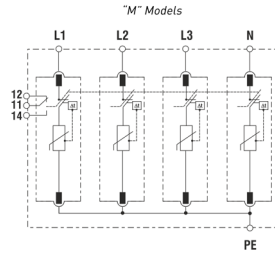
**TT (3Ph+N) - 4PG**



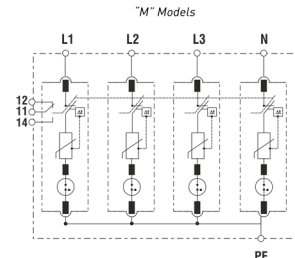
**TT LF (3Ph+N) - 4PG**



**TNS (3Ph+N) - 4P**

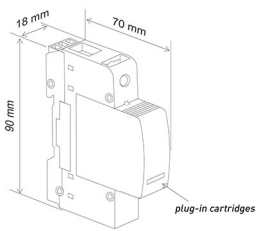


**TNS LF (3Ph+N) - 4P**

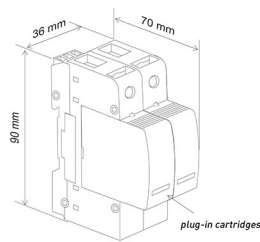


## DIMENSIONS

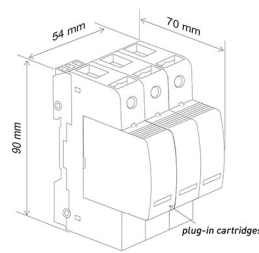
**1 Pole**



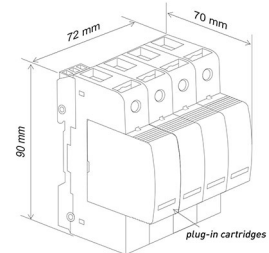
**2 Poles**



**3 Poles**



**4 Poles**



# Surge-Trap® Pluggable STPT1+2 Series - 5kA PV

**SURGE PROTECTION FOR SOLAR-PHOTOVOLTAIC SYSTEMS**

DC POWER LINE PROTECTION



STP T1+2 5 PV is the PHOTOVOLTAIC range of combined Type 1+2/ Class I+II devices intended for discharging lightning currents (10/350  $\mu$ s) and protecting against induced voltage surges (8/20  $\mu$ s), in accordance with EN 50539-11 and IEC 61643-31 standards. These products provide advanced 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. The devices are suitable for all PV applications: large-scale and rooftop. The series includes specific multipole products for multiple MPPT inverters.

## TECHNICAL DATA OVERVIEW

|                    |   |
|--------------------|---|
| Class              | Type 1+2 IEC 61643-31, Type 1+2 EN 50539-11 |
| Voltage Range DC   | 1000 ... 1500 VDC                           |
| I <sub>scpv</sub>  | 10000 A                                     |
| Body Material      | PA6 CT1; V-0                                |
| System type        | Y PV, multiple MPPT                         |
| Number of poles    | 3, 5, 8                                     |
| Format             | Pluggable                                   |
| Temperature range  | -40 ... 85 ° C                              |
| Rigid wire Section | 6 ... 35 mm <sup>2</sup>                    |
| Response Time      | 25 ns                                       |

## FEATURES & BENEFITS

- Lightning impulse current (10/350  $\mu$ s): 5kA
- Maximum discharge current (8/20 $\mu$ s): 40 kA
- Nominal discharge current (8/20 $\mu$ s): 20 kA
- U<sub>cpv</sub>: 1060 Vdc, 1500 Vdc
- I<sub>scpv</sub>: 10 kA (EN 50539-11), no back-up fuse required
- 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

## APPLICATIONS

- Photovoltaic

## STANDARDS

- EN 50539-11
- IEC 61643-31



# Surge-Trap® Pluggable STPT1+2 Series - 5kA PV

## PRODUCT RANGE



STPT12-5K1000V-YPVM

### Large-scale and rooftop PV

| Catalog number      | Item number | Number of poles/ phases | Ucpv     | Iscpv | I <sub>imp</sub> (10/350) | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>p</sub> at I <sub>n</sub> | Cartridge No L-N | Remote |
|---------------------|-------------|-------------------------|----------|-------|---------------------------|-------------------------|-----------------------|----------------------------------|------------------|--------|
| <b>YPV</b>          |             |                         |          |       |                           |                         |                       |                                  |                  |        |
| STPT12-5K1000V-YPV  | 83120167    | 3                       | 1060 VDC | 10 kA | 5 kA                      | 40 kA                   | 20 kA                 | ≤ 4 kV                           | SP12-5K1000V-PV  | No     |
| STPT12-5K1000V-YPVM | 83120168    | 3                       | 1060 VDC | 10 kA | 5 kA                      | 40 kA                   | 20 kA                 | ≤ 4 kV                           | SP12-5K1000V-PV  | Yes    |



STPT12-5K1000V-8YPVM

### Multipole for multiple MPPT inverters

| Catalog number        | Item number | Number of poles/ phases | Ucpv     | Iscpv | I <sub>imp</sub> (10/350) | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>p</sub> at I <sub>n</sub> | Cartridge No L-N | Remote |
|-----------------------|-------------|-------------------------|----------|-------|---------------------------|-------------------------|-----------------------|----------------------------------|------------------|--------|
| <b>Multiple MPPT</b>  |             |                         |          |       |                           |                         |                       |                                  |                  |        |
| STPT12-5K1000V-5YPVM  | 83120192    | 5                       | 1060 VDC | 10 kA | 5 kA                      | 40 kA                   | 20 kA                 | ≤ 4 kV                           | SP12-5K1000V-PV  | Yes    |
| STPT12-5K1000V-5Y2PVM | 83120206    | 5                       | 1060 VDC | 10 kA | 5 kA                      | 40 kA                   | 20 kA                 | ≤ 4 kV                           | SP12-5K1000V-PV  | Yes    |
| STPT12-5K1000V-8YPVM  | 83120190    | 8                       | 1060 VDC | 10 kA | 5 kA                      | 40 kA                   | 20 kA                 | ≤ 4 kV                           | SP12-5K1000V-PV  | Yes    |



SP12-5K1000V-PV

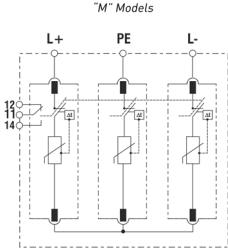
### Replacement cartridges

| Catalog number  | Item number | Ucpv    | Iscpv | I <sub>imp</sub> (10/350) | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>p</sub> at I <sub>n</sub> |
|-----------------|-------------|---------|-------|---------------------------|-------------------------|-----------------------|----------------------------------|
| SP12-5K1000V-PV | 83120011    | 530 VDC | 10 kA | 5 kA                      | 40 kA                   | 20 kA                 | ≤ 2 kV                           |
| SP12-5K1500V-PV | 83120023    | 750 VDC | 10 kA | 5 kA                      | 40 kA                   | 20 kA                 | ≤ 2.5 kV                         |

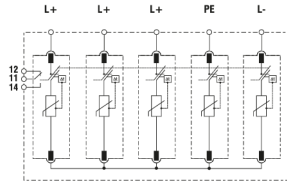
# Surge-Trap® Pluggable STPT1+2 Series - 5kA PV

## ELECTRICAL DIAGRAMS

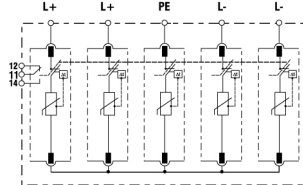
**Y PV**



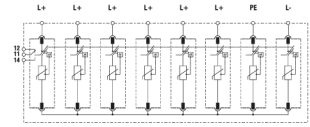
**5Y PV**



**5Y2PV**

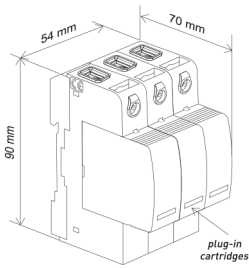


**8Y PV**

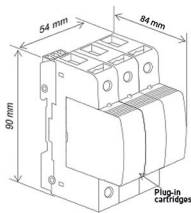


## DIMENSIONS

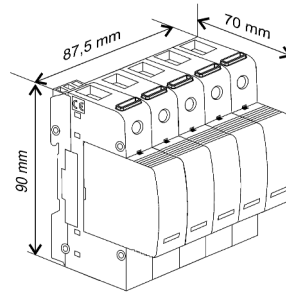
**3 Poles - 1000 VDC**



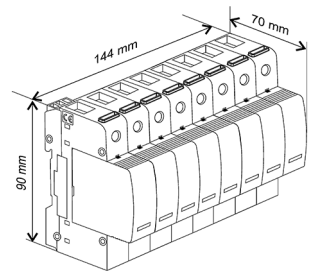
**3 Poles - 1500 VDC**



**5 Poles**



**8 Poles**



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# Surge-Trap<sup>®</sup> Pluggable STPT2 Series - 40kA PV

**SURGE PROTECTION FOR SOLAR-PHOTOVOLTAIC SYSTEMS**

DC POWER LINE PROTECTION



STP T2 40 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. The series includes specific multipole products for multiple MPPT (Maximum power point tracker) inverters.

## TECHNICAL DATA OVERVIEW

|                    |   |
|--------------------|---|
| Class              | Type 2 IEC 61643-31; Type 2 EN 50539-11; Type 2 UL 1449 |
| Voltage Range DC   | 660 ... 1500 VDC  |
| I <sub>scpv</sub>  | 10000 A   |
| SCCR               | 50 kA, 65 kA, 100 kA                                    |
| Body Material      | PA6 CT1; V-0  |
| System type        | Y PV, U PV, multiple MPPT                               |
| Number of poles    | 3, 5, 8   |
| Format             | Pluggable   |
| Temperature range  | -40 ... 85 ° C  |
| Rigid wire Section | 6 ... 35 mm <sup>2</sup>                                |
| Response Time      | 25 ns   |

## FEATURES & BENEFITS

- Maximum discharge current (8/20μs): 40 kA
- Nominal discharge current (8/20μs): 10 kA, 20 kA
- U<sub>cpv</sub>: 65, 80, 660, 1060 Vdc and 1500 Vdc
- I<sub>scpv</sub>: 10 kA (EN 50539-11), no back-up fuse required
- SCCR: 50 kA, 65 kA, 100 kA (UL 1449 4th Ed.)
- DIN-rail mountable, plug-in format
- Multiple MPPT specific products with UL 1449 certification
- 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

## APPLICATIONS

- Photovoltaic & wind

## STANDARDS

- EN 50539-11
- UL 1449 4th Ed.
- IEC 61643-31



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# Surge-Trap® Pluggable STPT2 Series - 40kA PV

## PRODUCT RANGE



STPT2-40K1500V-YPVM

### Large-scale and rooftop PV

| Catalog number      | Item number | Number of poles/ phases | Ucpv     | Iscpv | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>p</sub> at I <sub>n</sub> | Cartridge No L-N | Remote |
|---------------------|-------------|-------------------------|----------|-------|-------------------------|-----------------------|----------------------------------|------------------|--------|
| <b>Y PV</b>         |             |                         |          |       |                         |                       |                                  |                  |        |
| STPT2-40K600V-YPV   | 83020138    | 3                       | 660 VDC  | 10 kA | 40 kA                   | 20 kA                 | ≤ 2.6 kV                         | SP2-40K600V-PV   | No     |
| STPT2-40K600V-YPVM  | 83020139    | 3                       | 660 VDC  | 10 kA | 40 kA                   | 20 kA                 | ≤ 2.6 kV                         | SP2-40K600V-PV   | Yes    |
| STPT2-40K1000V-YPV  | 83020140    | 3                       | 1060 VDC | 10 kA | 40 kA                   | 20 kA                 | ≤ 4 kV                           | SP2-40K1000V-PV  | No     |
| STPT2-40K1000V-YPVM | 83020141    | 3                       | 1060 VDC | 10 kA | 40 kA                   | 20 kA                 | ≤ 4 kV                           | SP2-40K1000V-PV  | Yes    |
| STPT2-40K1500V-YPV  | 83020158    | 3                       | 1500 VDC | 10 kA | 40 kA                   | 15 kA                 | ≤ 5 kV                           | SP2-40K1500V-PV  | No     |
| STPT2-40K1500V-YPVM | 83020159    | 3                       | 1500 VDC | 10 kA | 40 kA                   | 15 kA                 | ≤ 5 kV                           | SP2-40K1500V-PV  | Yes    |



STPT2-40K1000V-8YPVM

### Multipole for multiple MPPT inverters

| Catalog number        | Item number | Number of poles/ phases | Ucpv     | Iscpv | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>p</sub> at I <sub>n</sub> | Cartridge No L-N | Remote |
|-----------------------|-------------|-------------------------|----------|-------|-------------------------|-----------------------|----------------------------------|------------------|--------|
| <b>Multiple MPPT</b>  |             |                         |          |       |                         |                       |                                  |                  |        |
| STPT2-40K1000V-5YPVM  | 83020188    | 5                       | 1060 VDC | 10 kA | 40 kA                   | 20 A                  | ≤ 4 kV                           | SP2-40K1000V-PV  | Yes    |
| STPT2-40K1000V-5Y2PVM | 83020223    | 5                       | 1060 VDC | 10 kA | 40 kA                   | 20 A                  | ≤ 4 kV                           | SP2-40K1000V-PV  | Yes    |
| STPT2-40K1000V-8YPVM  | 83020204    | 8                       | 1060 VDC | 10 kA | 40 kA                   | 20 A                  | ≤ 4 kV                           | SP2-40K1000V-PV  | Yes    |



SP2-40K1500V-PV

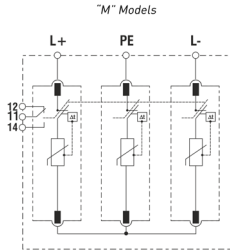
### Replacement cartridges

| Catalog number  | Item number | Ucpv    | Iscpv | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>p</sub> at I <sub>n</sub> |
|-----------------|-------------|---------|-------|-------------------------|-----------------------|----------------------------------|
| <b>PV</b>       |             |         |       |                         |                       |                                  |
| SP2-40K60V      | 83020008    | 65 VDC  | 1 kA  | 40 kA                   | 20 kA                 | ≤ 0.7 kV                         |
| SP2-40K75V      | 83020009    | 80 VDC  | 1 kA  | 40 kA                   | 20 kA                 | ≤ 0.8 kV                         |
| SP2-40K600V-PV  | 83020005    | 330 VDC | 10 kA | 40 kA                   | 20 kA                 | ≤ 1.3 kV                         |
| SP2-40K1000V-PV | 83020006    | 530 VDC | 10 kA | 40 kA                   | 20 kA                 | ≤ 2 kV                           |
| SP2-40K1500V-PV | 83020010    | 750 VDC | 10 kA | 40 kA                   | 15 kA                 | ≤ 2.5 kV                         |

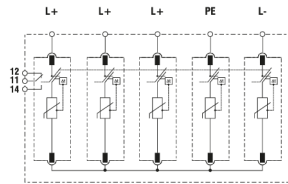
# Surge-Trap® Pluggable STPT2 Series - 40kA PV

## ELECTRICAL DIAGRAMS

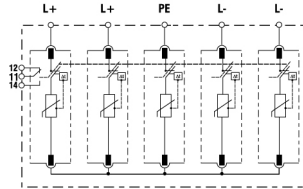
**Y PV**



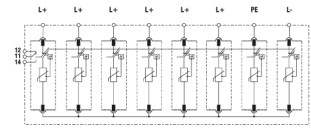
**5Y PV**



**5Y2PV**

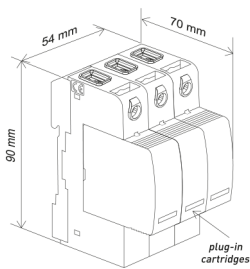


**8Y PV**

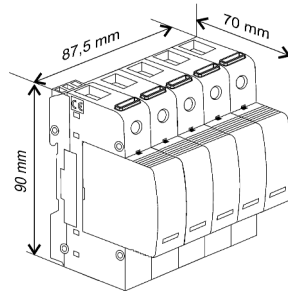


## DIMENSIONS

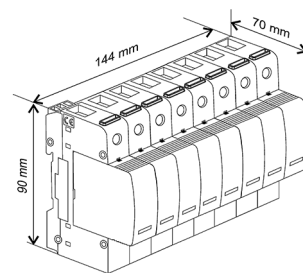
**3 Poles**



**5 Poles**



**8 Poles**



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# Surge-Trap<sup>®</sup> Monobloc STMT1 Series - 50kA

**SURGE PROTECTION FOR POWER LINES**

DIN-RAIL IEC TYPE 1 / CLASS I



STM T1 50 is the most robust series of single pole Type 1/Class I lightning current arresters, able to discharge energy (current) from a direct lightning strike (10/350µs) on an external lightning protection system (LPS) or overhead supplies, in accordance with EN/IEC 61643-11. Suitable as the first step of protection in incoming power supply panels and areas with high exposure to lightning strikes, fitted with an external lightning protection system.

## TECHNICAL DATA OVERVIEW

|                       |  |
|-----------------------|--|
| Class                 | Type 1 / Class I                       |
| $U_n$                 | 120/208V, 230/400V, 277/480V, 400/690V |
| $I_{imp}$             | 50 kA                                  |
| $I_n$ (8/20)          | 50 kA                                  |
| Body Material         | PC+GF; V-0                             |
| $I_{fi}$              | 50000 A                                |
| System type           | L-N, N-PE                              |
| Number of Poles       | 1                                      |
| Format                | Monobloc                               |
| Temperature range     | -40 ... 80 ° C                         |
| $I_{cc}$ Range        | 25 ... 50 kA                           |
| IP Code               | 20                                     |
| Back-up fuse          | 500 A gG                               |
| Stranded wire Section | 16 ... 25 mm <sup>2</sup>              |
| Rigid wire Section    | 16 ... 35 mm <sup>2</sup>              |

## FEATURES & BENEFITS

- Lightning impulse current (10/350µs): 50kA
- Follow current quenching capacity (I<sub>fi</sub>): 50kA
- Leakage current free (LCF)
- Multi-discharge technology
- Single pole devices for TNS, TNC, IT and TT earthing systems
- $U_n$ (L-N/L-L): 120/208V, 230/400V, 277/480V, 400/690V
- DIN-rail mountable, monobloc format
- Back-up fuse: 500 A gG

## APPLICATIONS

- Industry and automation
- Commercial and residential installations
- Telecom & IT & Data Centers
- Water treatment
- Smart grid & LV Metering
- Wind

## STANDARDS

- IEC 61643-11
- EN 61643-11



# Surge-Trap® Monobloc STMT1 Series - 50kA

## PRODUCT RANGE



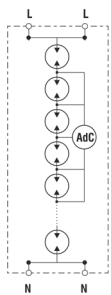
STMT1-50K275V-1P

### 1 Pole

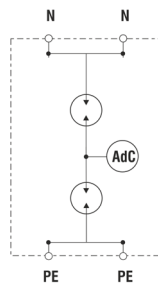
| Catalog number   | Item number | $U_n$   | $U_c$ | $I_{imp} (10/350)$ | $I_n (8/20)$ | $U_p$ at $I_n$ |
|------------------|-------------|---------|-------|--------------------|--------------|----------------|
| <b>L-N (1Ph)</b> |             |         |       |                    |              |                |
| STMT1-50K150V-1P | 83010103    | 120 VAC | 150 V | 50 kA              | 50 kA        | $\leq 2$ kV    |
| STMT1-50K275V-1P | 83010100    | 230 VAC | 275 V | 50 kA              | 50 kA        | $\leq 2$ kV    |
| STMT1-50K320V-1P | 83010104    | 277 VAC | 320 V | 50 kA              | 50 kA        | $\leq 2$ kV    |
| STMT1-50K440V-1P | 83010107    | 400 VAC | 440 V | 50 kA              | 50 kA        | $\leq 2.5$ kV  |
| <b>N-PE (N)</b>  |             |         |       |                    |              |                |
| STMT1-100K-N     | 83010102    | Neutral | 255 V | 100 kA             | 100 kA       | $\leq 2$ kV    |

## ELECTRICAL DIAGRAMS

### L-N (1Ph)

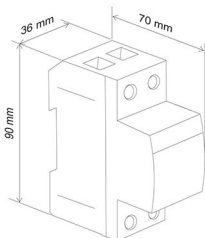


### N-PE (N)



## DIMENSIONS

### 1 Pole



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# Surge-Trap<sup>®</sup> Pluggable STPT12 Series - 12.5kA

**SURGE PROTECTION FOR POWER LINES**

DIN-RAIL IEC TYPE 1+2 / CLASS I+II



STP T12 12.5 is the series of combined Type 1+2/Class I+II devices for discharging lightning currents and protecting against voltage surges, in accordance with EN/IEC 61643-11. Suitable as the first step of protection in incoming power supply panels and areas with exposure to the atmosphere, where installations are usually provided with an external lightning protection system.

## TECHNICAL DATA OVERVIEW

|                       |   |
|-----------------------|---|
| Class                 | Type 1+2 / Class I+II                       |
| $U_n$                 | 60V, 120/208V, 230/400V, 277/480V, 400/690V |
| $I_{imp}$             | 12.5 kA                                     |
| $I_{max}$             | 50 kA                                       |
| $I_n$ (8/20)          | 20 kA                                       |
| $I_{scCR}$            | 25 kA                                       |
| Body Material         | PA66 CT1; V-0                               |
| System type           | TT, TNS, TNC, IT                            |
| Number of Poles       | 1,2,3,4                                     |
| Format                | Pluggable                                   |
| Temperature range     | -40 ... 80 ° C                              |
| IP Code               | 20  |
| Back-up fuse          | 200 A gG                                    |
| Stranded wire Section | 6 ... 25 mm <sup>2</sup>                    |
| Rigid wire Section    | 6 ... 35 mm <sup>2</sup>                    |

## FEATURES & BENEFITS

- Lightning impulse current (10/350μs): 12.5kA per phase
- Maximum discharge current (8/20μs): 50kA per phase
- Nominal discharge current (8/20μs): 20kA per phase
- TNS, TNC, TT and IT networks
- $U_n$ (L-N/L-L): 60V, 120/208V, 230/400V, 277/480V and 400/690V
- DIN-rail mountable, plug-in format
- 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
- Back-up fuse: 200 A gG

## APPLICATIONS

- Industry and automation
- Commercial and residential installations
- Telecom & IT & Data Centers
- Water treatment
- Smart grid & LV Metering
- Photovoltaic & wind

## STANDARDS

- IEC 61643-11
- EN 61643-11



# Surge-Trap® Pluggable STPT12 Series - 12.5kA

## PRODUCT RANGE



STPT12-12K275V-1PM

### 1 Pole

| Catalog number     | Item number | U <sub>n</sub> | U <sub>c</sub> | I <sub>imp</sub> (10/350) | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>p</sub> at I <sub>n</sub> | Remote | Cartridge No |            |
|--------------------|-------------|----------------|----------------|---------------------------|-------------------------|-----------------------|----------------------------------|--------|--------------|------------|
|                    |             |                |                |                           |                         |                       |                                  |        | L-N          | N-PE       |
| <b>L-N (1Ph)</b>   |             |                |                |                           |                         |                       |                                  |        |              |            |
| STPT12-12K150V-1P  | 83120100    | 120 VAC        | 150 V          | 12.5 kA                   | 50 kA                   | 20 kA                 | ≤ 1 kV                           | No     | SP12-12K150V | -          |
| STPT12-12K150V-1PM | 83120101    | 120 VAC        | 150 V          | 12.5 kA                   | 50 kA                   | 20 kA                 | ≤ 1 kV                           | Yes    | SP12-12K150V | -          |
| STPT12-12K275V-1P  | 83120102    | 230 VAC        | 275 V          | 12.5 kA                   | 50 kA                   | 20 kA                 | ≤ 1.3 kV                         | No     | SP12-12K275V | -          |
| STPT12-12K275V-1PM | 83120103    | 230 VAC        | 275 V          | 12.5 kA                   | 50 kA                   | 20 kA                 | ≤ 1.3 kV                         | Yes    | SP12-12K275V | -          |
| STPT12-12K320V-1P  | 83120104    | 277 VAC        | 320 V          | 12.5 kA                   | 50 kA                   | 20 kA                 | ≤ 1.4 kV                         | No     | SP12-12K320V | -          |
| STPT12-12K320V-1PM | 83120105    | 277 VAC        | 320 V          | 12.5 kA                   | 50 kA                   | 20 kA                 | ≤ 1.4 kV                         | Yes    | SP12-12K320V | -          |
| STPT12-12K440V-1P  | 83120106    | 400 VAC        | 440 V          | 12.5 kA                   | 50 kA                   | 20 kA                 | ≤ 1.8 kV                         | No     | SP12-12K440V | -          |
| STPT12-12K440V-1PM | 83120107    | 400 VAC        | 440 V          | 12.5 kA                   | 50 kA                   | 20 kA                 | ≤ 1.8 kV                         | Yes    | SP12-12K440V | -          |
| <b>N-PE (N)</b>    |             |                |                |                           |                         |                       |                                  |        |              |            |
| STPT12-25K-N       | 83120108    | Neutral        | 255 V          | 25 kA                     | 50 kA                   | 25 kA                 | ≤ 1.5 kV                         | No     | -            | SP12-25K-N |
| STPT12-50K-N       | 83120110    | Neutral        | 255 V          | 50 kA                     | 50 kA                   | 50 kA                 | ≤ 1.5 kV                         | No     | -            | SP12-50K-N |

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# Surge-Trap® Pluggable STPT12 Series - 12.5kA

## PRODUCT RANGE



STPT12-12K275V-2PGM

### 2 Poles

| Catalog number                    | Item number | U <sub>n</sub>                | U <sub>c</sub> | I <sub>imp</sub> (10/350)     | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>p</sub> at I <sub>n</sub>  | Remote | Cartridge No |            |
|-----------------------------------|-------------|-------------------------------|----------------|-------------------------------|-------------------------|-----------------------|-----------------------------------|--------|--------------|------------|
|                                   |             |                               |                |                               |                         |                       |                                   |        | L-N          | N-PE       |
| <b>TT (1Ph+N)</b>                 |             |                               |                |                               |                         |                       |                                   |        |              |            |
| STPT12-12K150V-2PG                | 83120112    | 120 VAC                       | 150 V          | 12.5 kA (L-N)<br>25 kA (N-PE) | 50 kA                   | 20 kA                 | ≤ 1 kV (L-N)<br>≤ 1.5 kV (N-PE)   | No     | SP12-12K150V | SP12-25K-N |
| STPT12-12K150V-2PGM               | 83120113    | 120 VAC                       | 150 V          | 12.5 kA (L-N)<br>25 kA (N-PE) | 50 kA                   | 20 kA                 | ≤ 1 kV (L-N)<br>≤ 1.5 kV (N-PE)   | Yes    | SP12-12K150V | SP12-25K-N |
| STPT12-12K275V-2PG                | 83120114    | 230 VAC                       | 275 V          | 12.5 kA (L-N)<br>25 kA (N-PE) | 50 kA                   | 20 kA                 | ≤ 1.3 kV (L-N)<br>≤ 1.5 kV (N-PE) | No     | SP12-12K275V | SP12-25K-N |
| STPT12-12K275V-2PGM               | 83120115    | 230 VAC                       | 275 V          | 12.5 kA (L-N)<br>25 kA (N-PE) | 50 kA                   | 20 kA                 | ≤ 1.3 kV (L-N)<br>≤ 1.5 kV (N-PE) | Yes    | SP12-12K275V | SP12-25K-N |
| STPT12-12K320V-2PG                | 83120116    | 277 VAC                       | 320 V          | 12.5 kA (L-N)<br>25 kA (N-PE) | 50 kA                   | 20 kA                 | ≤ 1.4 kV (L-N)<br>≤ 1.5 kV (N-PE) | No     | SP12-12K320V | SP12-25K-N |
| STPT12-12K320V-2PGM               | 83120117    | 277 VAC                       | 320 V          | 12.5 kA (L-N)<br>25 kA (N-PE) | 50 kA                   | 20 kA                 | ≤ 1.4 kV (L-N)<br>≤ 1.5 kV (N-PE) | Yes    | SP12-12K320V | SP12-25K-N |
| <b>TNS (1Ph+N)</b>                |             |                               |                |                               |                         |                       |                                   |        |              |            |
| STPT12-12K75V-2P                  | 83120126    | 60 VAC                        | 75 V           | 12.5 kA                       | 50 kA                   | 20 kA                 | ≤ 0.65 kV                         | No     | SP12-12K75V  | -          |
| STPT12-12K75V-2PM                 | 83120127    | 60 VAC                        | 75 V           | 12.5 kA                       | 50 kA                   | 20 kA                 | ≤ 0.65 kV                         | Yes    | SP12-12K75V  | -          |
| STPT12-12K150V-2P                 | 83120118    | 120 VAC                       | 150 V          | 12.5 kA                       | 50 kA                   | 20 kA                 | ≤ 1 kV                            | No     | SP12-12K150V | -          |
| STPT12-12K150V-2PM                | 83120119    | 120 VAC                       | 150 V          | 12.5 kA                       | 50 kA                   | 20 kA                 | ≤ 1 kV                            | Yes    | SP12-12K150V | -          |
| STPT12-12K275V-2P                 | 83120120    | 230 VAC                       | 275 V          | 12.5 kA                       | 50 kA                   | 20 kA                 | ≤ 1.3 kV                          | No     | SP12-12K275V | -          |
| STPT12-12K275V-2PM                | 83120121    | 230 VAC                       | 275 V          | 12.5 kA                       | 50 kA                   | 20 kA                 | ≤ 1.3 kV                          | Yes    | SP12-12K275V | -          |
| STPT12-12K320V-2P                 | 83120122    | 277 VAC                       | 320 V          | 12.5 kA                       | 50 kA                   | 20 kA                 | ≤ 1.4 kV                          | No     | SP12-12K320V | -          |
| STPT12-12K320V-2PM                | 83120123    | 277 VAC                       | 320 V          | 12.5 kA                       | 50 kA                   | 20 kA                 | ≤ 1.4 kV                          | Yes    | SP12-12K320V | -          |
| <b>IT (1Ph+N)<br/>TNS (1Ph+N)</b> |             |                               |                |                               |                         |                       |                                   |        |              |            |
| STPT12-12K440V-2P                 | 83120124    | 230 VAC (IT)<br>400 VAC (TNS) | 440 V          | 12.5 kA                       | 50 kA                   | 20 kA                 | ≤ 1.8 kV                          | No     | SP12-12K440V | -          |
| STPT12-12K440V-2PM                | 83120125    | 230 VAC (IT)<br>400 VAC (TNS) | 440 V          | 12.5 kA                       | 50 kA                   | 20 kA                 | ≤ 1.8 kV                          | Yes    | SP12-12K440V | -          |

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# Surge-Trap® Pluggable STPT12 Series - 12.5kA

## PRODUCT RANGE



STPT12-12K275V-3PM

### 3 Poles

| Catalog number                | Item number | $U_n$                                 | $U_c$ | $I_{imp}$<br>(10/350) | $I_{max}$<br>(8/20) | $I_n$ (8/20) | $U_p$ at $I_n$ | Remote | Cartridge No<br>L-N |
|-------------------------------|-------------|---------------------------------------|-------|-----------------------|---------------------|--------------|----------------|--------|---------------------|
| <b>TNC (3Ph)</b>              |             |                                       |       |                       |                     |              |                |        |                     |
| STPT12-12K150V-3P             | 83120128    | 120/208 VAC                           | 150 V | 12.5 kA               | 50 kA               | 20 kA        | ≤ 1 kV         | No     | SP12-12K150V        |
| STPT12-12K150V-3PM            | 83120129    | 120/208 VAC                           | 150 V | 12.5 kA               | 50 kA               | 20 kA        | ≤ 1 kV         | Yes    | SP12-12K150V        |
| STPT12-12K275V-3P             | 83120130    | 230/400 VAC                           | 275 V | 12.5 kA               | 50 kA               | 20 kA        | ≤ 1.3 kV       | No     | SP12-12K275V        |
| STPT12-12K275V-3PM            | 83120131    | 230/400 VAC                           | 275 V | 12.5 kA               | 50 kA               | 20 kA        | ≤ 1.3 kV       | Yes    | SP12-12K275V        |
| STPT12-12K320V-3P             | 83120132    | 277/480 VAC                           | 320 V | 12.5 kA               | 50 kA               | 20 kA        | ≤ 1.4 kV       | No     | SP12-12K320V        |
| STPT12-12K320V-3PM            | 83120133    | 277/480 VAC                           | 320 V | 12.5 kA               | 50 kA               | 20 kA        | ≤ 1.4 kV       | Yes    | SP12-12K320V        |
| <b>IT (3Ph)<br/>TNC (3Ph)</b> |             |                                       |       |                       |                     |              |                |        |                     |
| STPT12-12K440V-3P             | 83120134    | 230/400 VAC (IT)<br>400/690 VAC (TNC) | 440 V | 12.5 kA               | 50 kA               | 20 kA        | ≤ 1.8 kV       | No     | SP12-12K440V        |
| STPT12-12K440V-3PM            | 83120135    | 230/400 VAC (IT)<br>400/690 VAC (TNC) | 440 V | 12.5 kA               | 50 kA               | 20 kA        | ≤ 1.8 kV       | Yes    | SP12-12K440V        |

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# Surge-Trap® Pluggable STPT12 Series - 12.5kA

## PRODUCT RANGE



STPT12-12K275V-4PM

### 4 Poles

| Catalog number                  | Item number | U <sub>n</sub>                        | U <sub>c</sub> | I <sub>imp</sub> (10/350)     | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>p</sub> at I <sub>n</sub>  | Remote | Cartridge No |            |
|---------------------------------|-------------|---------------------------------------|----------------|-------------------------------|-------------------------|-----------------------|-----------------------------------|--------|--------------|------------|
|                                 |             |                                       |                |                               |                         |                       |                                   |        | L-N          | N-PE       |
| <b>TT (3Ph+N)</b>               |             |                                       |                |                               |                         |                       |                                   |        |              |            |
| STPT12-12K150V-4PG              | 83120136    | 120/208 VAC                           | 150 V          | 12.5 kA (L-N)<br>50 kA (N-PE) | 50 kA                   | 20 kA                 | ≤ 1 kV (L-N)<br>≤ 1.5 kV (N-PE)   | No     | SP12-12K150V | SP12-50K-N |
| STPT12-12K150V-4PGM             | 83120137    | 120/208 VAC                           | 150 V          | 12.5 kA (L-N)<br>50 kA (N-PE) | 50 kA                   | 20 kA                 | ≤ 1 kV (L-N)<br>≤ 1.5 kV (N-PE)   | Yes    | SP12-12K150V | SP12-50K-N |
| STPT12-12K275V-4PG              | 83120138    | 230/400 VAC                           | 275 V          | 12.5 kA (L-N)<br>50 kA (N-PE) | 50 kA                   | 20 kA                 | ≤ 1.3 kV (L-N)<br>≤ 1.5 kV (N-PE) | No     | SP12-12K275V | SP12-50K-N |
| STPT12-12K275V-4PGM             | 83120139    | 230/400 VAC                           | 275 V          | 12.5 kA (L-N)<br>50 kA (N-PE) | 50 kA                   | 20 kA                 | ≤ 1.3 kV (L-N)<br>≤ 1.5 kV (N-PE) | Yes    | SP12-12K275V | SP12-50K-N |
| STPT12-12K320V-4PG              | 83120140    | 277/480 VAC                           | 320 V          | 12.5 kA (L-N)<br>50 kA (N-PE) | 50 kA                   | 20 kA                 | ≤ 1.4 kV (L-N)<br>≤ 1.5 kV (N-PE) | No     | SP12-12K320V | SP12-50K-N |
| STPT12-12K320V-4PGM             | 83120141    | 277/480 VAC                           | 320 V          | 12.5 kA (L-N)<br>50 kA (N-PE) | 50 kA                   | 20 kA                 | ≤ 1.4 kV (L-N)<br>≤ 1.5 kV (N-PE) | Yes    | SP12-12K320V | SP12-50K-N |
| <b>TNS (3Ph+N)</b>              |             |                                       |                |                               |                         |                       |                                   |        |              |            |
| STPT12-12K150V-4P               | 83120142    | 120/208 VAC                           | 150 V          | 12.5 kA                       | 50 kA                   | 20 kA                 | ≤ 1 kV                            | No     | SP12-12K150V | -          |
| STPT12-12K150V-4PM              | 83120143    | 120/208 VAC                           | 150 V          | 12.5 kA                       | 50 kA                   | 20 kA                 | ≤ 1 kV                            | Yes    | SP12-12K150V | -          |
| STPT12-12K275V-4P               | 83120144    | 230/400 VAC                           | 275 V          | 12.5 kA                       | 50 kA                   | 20 kA                 | ≤ 1.3 kV                          | No     | SP12-12K275V | -          |
| STPT12-12K275V-4PM              | 83120145    | 230/400 VAC                           | 275 V          | 12.5 kA                       | 50 kA                   | 20 kA                 | ≤ 1.3 kV                          | Yes    | SP12-12K275V | -          |
| STPT12-12K320V-4P               | 83120146    | 277/480 VAC                           | 320 V          | 12.5 kA                       | 50 kA                   | 20 kA                 | ≤ 1.4 kV                          | No     | SP12-12K320V | -          |
| STPT12-12K320V-4PM              | 83120147    | 277/480 VAC                           | 320 V          | 12.5 kA                       | 50 kA                   | 20 kA                 | ≤ 1.4 kV                          | Yes    | SP12-12K320V | -          |
| <b>IT (3Ph)<br/>TNS (3Ph+N)</b> |             |                                       |                |                               |                         |                       |                                   |        |              |            |
| STPT12-12K440V-4P               | 83120148    | 230/400 VAC (IT)<br>400/690 VAC (TNS) | 440 V          | 12.5 kA                       | 50 kA                   | 20 kA                 | ≤ 1.8 kV                          | No     | SP12-12K440V | -          |
| STPT12-12K440V-4PM              | 83120149    | 230/400 VAC (IT)<br>400/690 VAC (TNS) | 440 V          | 12.5 kA                       | 50 kA                   | 20 kA                 | ≤ 1.8 kV                          | Yes    | SP12-12K440V | -          |

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# Surge-Trap® Pluggable STPT12 Series - 12.5kA

## PRODUCT RANGE



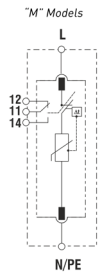
SP12-12K275V

### Replacement cartridges

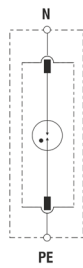
| Catalog number | Item number | U <sub>n</sub> | U <sub>c</sub> | I <sub>imp</sub> (10/350) | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>p</sub> at I <sub>n</sub> |
|----------------|-------------|----------------|----------------|---------------------------|-------------------------|-----------------------|----------------------------------|
| <b>L-N</b>     |             |                |                |                           |                         |                       |                                  |
| SP12-12K75V    | 83120000    | 60             | 75 V           | 12.5 kA                   | 50 kA                   | 20 kA                 | ≤ 0.65 kV                        |
| SP12-12K150V   | 83120001    | 120            | 150 V          | 12.5 kA                   | 50 kA                   | 20 kA                 | ≤ 1 kV                           |
| SP12-12K275V   | 83120002    | 230            | 275 V          | 12.5 kA                   | 50 kA                   | 20 kA                 | ≤ 1.3 kV                         |
| SP12-12K320V   | 83120003    | 277            | 320 V          | 12.5 kA                   | 50 kA                   | 20 kA                 | ≤ 1.4 kV                         |
| SP12-12K440V   | 83120004    | 400            | 440 V          | 12.5 kA                   | 50 kA                   | 20 kA                 | ≤ 1.8 kV                         |
| <b>N-PE</b>    |             |                |                |                           |                         |                       |                                  |
| SP12-25K-N     | 83120005    | Neutral        | 255 V          | 25 kA                     | 50 kA                   | 25 kA                 | ≤ 1.5 kV                         |
| SP12-50K-N     | 83120006    | Neutral        | 255 V          | 50 kA                     | 50 kA                   | 50 kA                 | ≤ 1.5 kV                         |

## ELECTRICAL DIAGRAMS

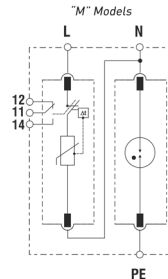
**L-N (1Ph)**



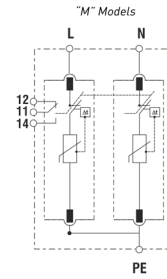
**N-PE (N)**



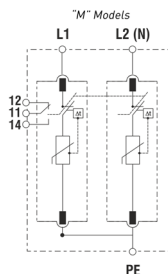
**TT (1Ph+N) - 2PG**



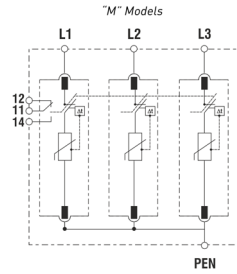
**TNS (1Ph+N) - 2P**



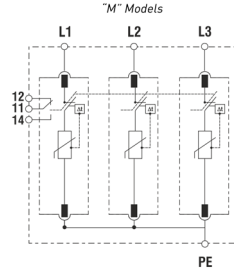
**IT (1Ph+N) - 2P**



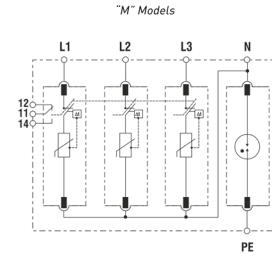
**TNC (3Ph) - 3P**



**IT (3Ph) - 3P**



**TT (3Ph+N) - 4PG**

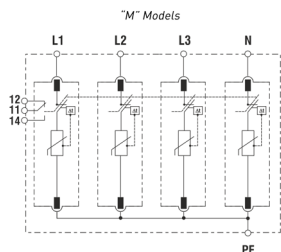




# Surge-Trap® Pluggable STPT12 Series - 12.5kA

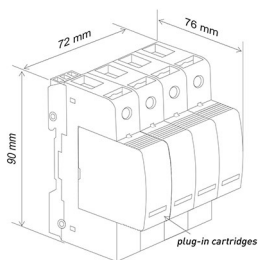
## ELECTRICAL DIAGRAMS

### TNS (3Ph+N) - 4P

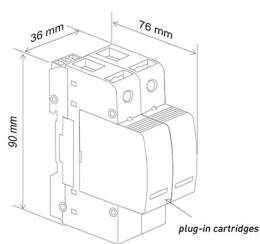


## DIMENSIONS

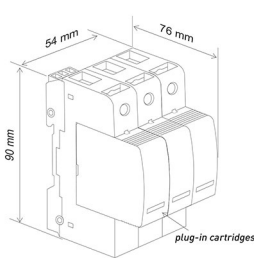
### 1 Pole



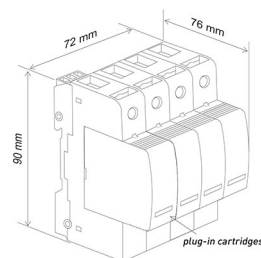
### 2 Poles



### 3 Poles



### 4 Poles



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# Surge-Trap<sup>®</sup> Pluggable STPT12 Series - 25kA

**SURGE PROTECTION FOR POWER LINES**

DIN-RAIL IEC TYPE 1+2 / CLASS I+II



STP T12 25 is the series of combined Type 1+2/Class I+II devices for discharging lightning currents and protecting against voltage surges, in accordance with EN/IEC 61643-11. Suitable as the first step of protection in incoming power supply panels and areas with exposure to the atmosphere, where installations are usually provided with an external lightning protection system.

## TECHNICAL DATA OVERVIEW

|                       |                          |
|-----------------------|--------------------------|
| Class                 | Type 1+2 / Class I+II    |
| $U_n$                 | 230/400V                 |
| $I_{imp}$             | 25 kA                    |
| $I_{max}$             | 100 kA                   |
| $I_n (8/20)$          | 25 kA                    |
| $I_{sccr}$            | 25 kA                    |
| Body Material         | PA66 CT1; V-0            |
| System type           | TT, TNS, TNC             |
| Number of Poles       | 1,2,3,4                  |
| Format                | Pluggable                |
| Temperature range     | -40 ... 80 ° C           |
| IP Code               | 20                       |
| Back-up fuse          | 315 A gG                 |
| Stranded wire Section | 6 ... 25 mm <sup>2</sup> |
| Rigid wire Section    | 6 ... 35 mm <sup>2</sup> |

## FEATURES & BENEFITS

- Lightning impulse current (10/350μs): 25kA per phase
- Maximum discharge current (8/20μs): 100kA per phase
- Nominal discharge current (8/20μs): 25kA per phase
- TNS, TNC and TT networks
- $U_n(L-N/L-L)$ : 230/400V
- DIN-rail mountable, plug-in format
- 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
- Back-up fuse: 315 A gG

## APPLICATIONS

- Industry and automation
- Commercial and residential installations
- Telecom & IT & Data Centers
- Water treatment
- Smart grid & LV Metering
- Photovoltaic & wind

## STANDARDS

- IEC 61643-11
- EN 61643-11



# Surge-Trap® Pluggable STPT12 Series - 25kA

## PRODUCT RANGE



STPT12-25K275V-1PM

### 1 Pole

| Catalog number     | Item number | U <sub>n</sub> | U <sub>c</sub> | I <sub>imp</sub> (10/350) | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>p</sub> at I <sub>n</sub> | Remote | Cartridge No |             |
|--------------------|-------------|----------------|----------------|---------------------------|-------------------------|-----------------------|----------------------------------|--------|--------------|-------------|
|                    |             |                |                |                           |                         |                       |                                  |        | L-N          | N-PE        |
| <b>L-N (1Ph)</b>   |             |                |                |                           |                         |                       |                                  |        |              |             |
| STPT12-25K275V-1P  | 83120152    | 230 VAC        | 275 V          | 25 kA                     | 100 kA                  | 25 kA                 | ≤ 1.5 kV                         | No     | SP12-25K275V | -           |
| STPT12-25K275V-1PM | 83120153    | 230 VAC        | 275 V          | 25 kA                     | 100 kA                  | 25 kA                 | ≤ 1.5 kV                         | Yes    | SP12-25K275V | -           |
| <b>N-PE (N)</b>    |             |                |                |                           |                         |                       |                                  |        |              |             |
| STPT12-100K-N      | 83120166    | Neutral        | 255 V          | 100 kA                    | 100 kA                  | 50 kA                 | ≤ 1.5 kV                         | No     | -            | SP12-100K-N |



STPT12-25K275V-2PM

### 2 Poles

| Catalog number      | Item number | U <sub>n</sub> | U <sub>c</sub> | I <sub>imp</sub> (10/350) | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>p</sub> at I <sub>n</sub> | Remote | Cartridge No |              |
|---------------------|-------------|----------------|----------------|---------------------------|-------------------------|-----------------------|----------------------------------|--------|--------------|--------------|
|                     |             |                |                |                           |                         |                       |                                  |        | L-N          | N-PE         |
| <b>TT (1Ph+N)</b>   |             |                |                |                           |                         |                       |                                  |        |              |              |
| STPT12-25K275V-2PG  | 83120154    | 230 / 400 VAC  | 275 V          | 25 kA                     | 100 kA                  | 25 kA                 | ≤ 1.5 kV                         | No     | SP12-25K275V | SP12-50K-2PN |
| STPT12-25K275V-2PGM | 83120155    | 230 / 400 VAC  | 275 V          | 25 kA                     | 100 kA                  | 25 kA                 | ≤ 1.5 kV                         | Yes    | SP12-25K275V | SP12-50K-2PN |
| <b>TNS (1Ph+N)</b>  |             |                |                |                           |                         |                       |                                  |        |              |              |
| STPT12-25K275V-2P   | 83120156    | 230 / 400 VAC  | 275 V          | 25 kA                     | 100 kA                  | 25 kA                 | ≤ 1.5 kV                         | No     | SP12-25K275V | -            |
| STPT12-25K275V-2PM  | 83120157    | 230 / 400 VAC  | 275 V          | 25 kA                     | 100 kA                  | 25 kA                 | ≤ 1.5 kV                         | Yes    | SP12-25K275V | -            |



STPT12-25K275V-3PM

### 3 Poles

| Catalog number     | Item number | U <sub>n</sub> | U <sub>c</sub> | I <sub>imp</sub> (10/350) | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>p</sub> at I <sub>n</sub> | Remote | Cartridge No |      |
|--------------------|-------------|----------------|----------------|---------------------------|-------------------------|-----------------------|----------------------------------|--------|--------------|------|
|                    |             |                |                |                           |                         |                       |                                  |        | L-N          | N-PE |
| <b>TNC (3Ph)</b>   |             |                |                |                           |                         |                       |                                  |        |              |      |
| STPT12-25K275V-3P  | 83120158    | 230 / 400 VAC  | 275 V          | 25 kA                     | 100 kA                  | 25 kA                 | ≤ 1.5 kV                         | No     | SP12-25K275V | -    |
| STPT12-25K275V-3PM | 83120159    | 230 / 400 VAC  | 275 V          | 25 kA                     | 100 kA                  | 25 kA                 | ≤ 1.5 kV                         | Yes    | SP12-25K275V | -    |

# Surge-Trap® Pluggable STPT12 Series - 25kA

## PRODUCT RANGE



STPT12-25K275V-4PM

### 4 Poles

| Catalog number      | Item number | U <sub>n</sub> | U <sub>c</sub> | I <sub>imp</sub> (10/350) | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>p</sub> at I <sub>n</sub> | Remote | Cartridge No |             |
|---------------------|-------------|----------------|----------------|---------------------------|-------------------------|-----------------------|----------------------------------|--------|--------------|-------------|
|                     |             |                |                |                           |                         |                       |                                  |        | L-N          | N-PE        |
| <b>TT (3Ph+N)</b>   |             |                |                |                           |                         |                       |                                  |        |              |             |
| STPT12-25K275V-4PG  | 83120150    | 230 / 400 VAC  | 275 V          | 25 kA                     | 100 kA                  | 25 kA                 | ≤ 1.5 kV                         | No     | SP12-25K275V | SP12-100K-N |
| STPT12-25K275V-4PGM | 83120151    | 230 / 400 VAC  | 275 V          | 25 kA                     | 100 kA                  | 25 kA                 | ≤ 1.5 kV                         | Yes    | SP12-25K275V | SP12-100K-N |
| <b>TNS (3Ph+N)</b>  |             |                |                |                           |                         |                       |                                  |        |              |             |
| STPT12-25K275V-4P   | 83120160    | 230 / 400 VAC  | 275 V          | 25 kA                     | 100 kA                  | 25 kA                 | ≤ 1.5 kV                         | No     | SP12-25K275V | -           |
| STPT12-25K275V-4PM  | 83120161    | 230 / 400 VAC  | 275 V          | 25 kA                     | 100 kA                  | 25 kA                 | ≤ 1.5 kV                         | Yes    | SP12-25K275V | -           |



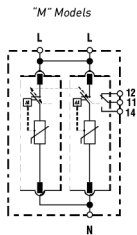
SP12-25K275V

### Replacement cartridges

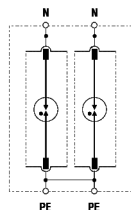
| Catalog number   | Item number | U <sub>n</sub> | U <sub>c</sub> | I <sub>imp</sub> (10/350) | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>p</sub> at I <sub>n</sub> |
|------------------|-------------|----------------|----------------|---------------------------|-------------------------|-----------------------|----------------------------------|
| <b>L-N (1Ph)</b> |             |                |                |                           |                         |                       |                                  |
| SP12-25K275V     | 83120007    | 230 VAC        | 275 V          | 25 kA                     | 100 kA                  | 25 kA                 | ≤ 1.5 kV                         |
| <b>N-PE (N)</b>  |             |                |                |                           |                         |                       |                                  |
| SP12-50K-2PN     | 83120009    | Neutral        | 255 V          | 50 kA                     | 100 kA                  | 25 kA                 | ≤ 1.5 kV                         |
| SP12-100K-N      | 83120008    | Neutral        | 255 V          | 100 kA                    | 100 kA                  | 50 kA                 | ≤ 1.5 kV                         |

## ELECTRICAL DIAGRAMS

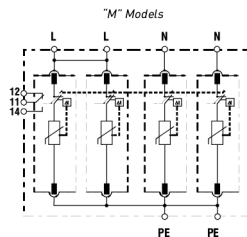
### L-N (1Ph)



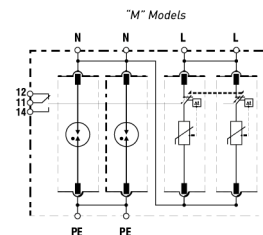
### N-PE (N)



### TNS (1Ph+N) - 2P



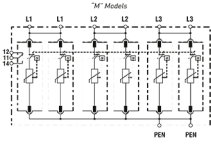
### TT (1Ph+N) - 2PG



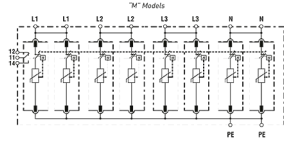
# Surge-Trap® Pluggable STPT12 Series - 25kA

## ELECTRICAL DIAGRAMS

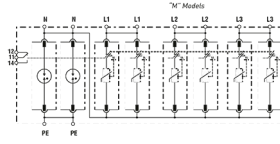
TNC (3Ph) - 3P



TNS (3Ph+N) - 4P

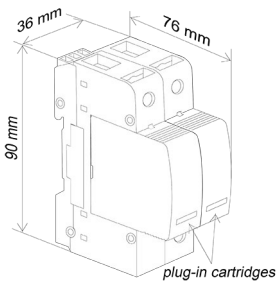


TT (3Ph+N) - 4PG

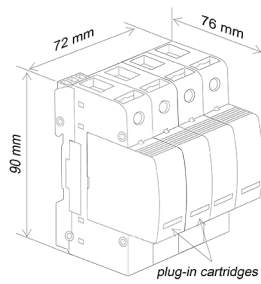


## DIMENSIONS

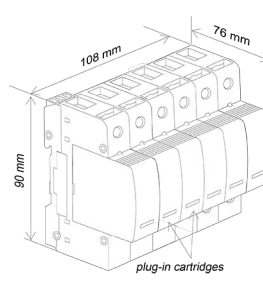
1 Pole



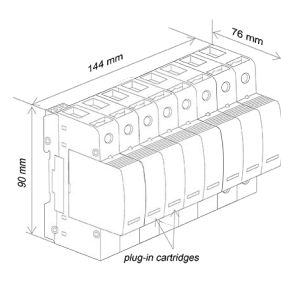
2 Poles



3 Poles



4 Poles



# Surge-Trap<sup>®</sup> Monobloc STMT23 Series for fusebox

**SURGE PROTECTION FOR OUTDOOR AND COMMERCIAL LED LIGHTING**

POWER LINE PROTECTION FOR THE FUSEBOX/POLE BASE (IEC)



STM T23 SF is the series of robust 10kV/10kA combined Type 2+3/Class II+III devices for discharging voltage surges while providing a very fine voltage protection level, in accordance with EN/IEC 61643-11. Suitable for protection in the fusebox (mast) of LED outdoor luminaires. Due to the exposure of the extremely sensitive LED electronics to lightning-induced overvoltages, STM T23 SF is a widespread market solution amongst OEM manufacturers of LED lighting systems.

## TECHNICAL DATA OVERVIEW

|                       |                             |
|-----------------------|-----------------------------|
| Class                 | IEC: Type 2+3               |
| U <sub>n</sub>        | 230V                        |
| U <sub>c</sub>        | 320 V                       |
| I <sub>max</sub>      | 10 kA                       |
| I <sub>n</sub> (8/20) | 5 kA                        |
| Body Material         | PC+GF; V-0                  |
| Format                | Slim monobloc               |
| Operating temperature | -40 ... 80°C                |
| I <sub>cc</sub>       | 10 kA                       |
| U <sub>oc</sub>       | 10 kV                       |
| IL                    | < 2.5 A                     |
| IP Code               | 20                          |
| Back-up fuse          | 25 A gG                     |
| Stranded wire Section | 0.7 ... 2.5 mm <sup>2</sup> |
| Response Time         | 25 ns                       |

## FEATURES & BENEFITS

- Maximum discharge current (8/20μs): 10kA
- Nominal discharge current (8/20μs): 5kA
- Combined discharge pulse (1.2/50μs): 10kV
- Single phase networks
- DIN-rail mountable, monobloc format
- Special size for DIN-rail luminaire fuseboxes
- Visual (LED) end of life indicator
- Rated current load (IL): 2.5 A
- Surge tested and certified luminary with STM T23 SF by accredited lab
- Back-up fuse: 25 A gG

## APPLICATIONS

- LED outdoor lighting

## STANDARDS

- IEC 61643-11
- EN 61643-11



# Surge-Trap<sup>®</sup> Monobloc STMT23 Series for fusebox

## PRODUCT RANGE



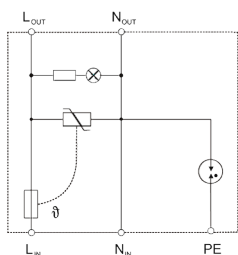
STMT23-10K320V-SP-SF

### 2 Poles (Series/Parallel) for Fusebox

| Catalog number       | Item number | U <sub>n</sub> | U <sub>c</sub> | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>oc</sub> | U <sub>p</sub> at I <sub>n</sub>  |
|----------------------|-------------|----------------|----------------|-------------------------|-----------------------|-----------------|-----------------------------------|
| <b>C4 (1Ph+N)</b>    |             |                |                |                         |                       |                 |                                   |
| STMT23-10K320V-SP-SF | 83230512    | 230 VAC        | 320 V          | 10 kA                   | 5 kA                  | 10 kV           | ≤ 1.5 kV (L-N)<br>≤ 1.8 kV (N-PE) |

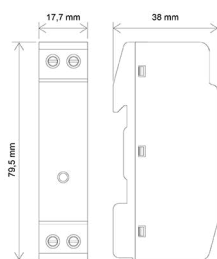
## ELECTRICAL DIAGRAMS

### C4(1Ph+N) - (Series/Parallel)



## DIMENSIONS

### Slim SPD Fusebox



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# Surge-Trap® Type 2+3 - for LED Lighting

**SURGE PROTECTION FOR OUTDOOR AND COMMERCIAL LED LIGHTING**

POWER LINE PROTECTION FOR THE LED DRIVER IN THE FIXTURE (UL & IEC)



STL T23 is the series of robust 10-20 kV combined Type 2+3/Class II+III devices for discharging voltage surges while providing a very fine voltage protection level, in accordance with EN/IEC 61643-11. Suitable for protection of LED outdoor luminaires (street-light). Due to the exposure of the extremely sensitive LED electronics to lightning-induced overvoltages, STL T23 is a widespread market solution amongst OEM manufacturers of LED lighting systems.

## TECHNICAL DATA OVERVIEW

|                       |                             |
|-----------------------|-----------------------------|
| Class                 | Type 2+3 / Class II+III     |
| $U_n$                 | 230 V                       |
| $I_{max}$ Range       | 10 ... 20 kA                |
| Body Material         | PA66 CT1; V-0               |
| Format                | Hardwired                   |
| Temperature range     | -40 ... 80 °C               |
| $I_{cc}$ Range        | 1 ... 10 A                  |
| $I_n$ (8/20) Range    | 5 ... 10 kA                 |
| $U_{oc}$ Range        | 10 ... 20 kV                |
| IL                    | 2.5 ... 10 A                |
| IP Code               | 20                          |
| Back-up fuse          | 25 ... 32 A gG              |
| Stranded wire Section | 0.7 ... 2.5 mm <sup>2</sup> |
| Response Time         | 25 ns                       |

## FEATURES & BENEFITS

- STL, STLB
- Combined voltage pulse (1.2/50µs): 10 kV, 20 kV ( $U_{oc}$ )
- Maximum discharge current (8/20µs): 10 kA, 20 kA
- Nominal discharge current (8/20µs): 5 kA, 10 kA
- Class 1 and Class 2 luminaires, universal solutions
- Miniature size and easy to install
- Hardwired, in-line format
- End of life indication
- Rated current load (IL): 2.5 A, 10 A (series)
- Optional: "surge tested and certified" luminaire with STL T23 by accredited LAB
- Back-up fuse: 25 A gG

## APPLICATIONS

- LED outdoor lighting

## STANDARDS

- IEC 61643-11
- EN 61643-11
- IEE/ANSI C62.41.2





# Surge-Trap® Type 2+3 - for LED Lighting

## PRODUCT RANGE



STLT23-10K320V-C12

### STL

| Catalog number                     | Item number | U <sub>n</sub> | U <sub>c</sub> | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>oc</sub> | U <sub>p</sub> at I <sub>n</sub>     | IL    |
|------------------------------------|-------------|----------------|----------------|-------------------------|-----------------------|-----------------|--------------------------------------|-------|
| <b>C12 (1Ph+N / 2Ph-Universal)</b> |             |                |                |                         |                       |                 |                                      |       |
| STLT23-10K320V-C12                 | 83230302    | 230 VAC        | 320 V          | 10 kA                   | 5 kA                  | 10 kV           | ≤ 1.5 kV (L-N)<br>≤ 1.8 kV (L/N-GND) | 10 A  |
| <b>C2 (1Ph+N)</b>                  |             |                |                |                         |                       |                 |                                      |       |
| STLT23-10K320V-C2-WD               | 83230323    | 230 VAC        | 320 V          | 10 kA                   | 5 kA                  | 10 kV           | ≤ 1.5 kV (L-N)                       | 2.5 A |
| <b>C4 (1Ph+N)</b>                  |             |                |                |                         |                       |                 |                                      |       |
| STLT23-10K320V-C4-WD               | 83230322    | 230 VAC        | 320 V          | 10 kA                   | 5 kA                  | 10 kV           | ≤ 1.5 kV (L-N)<br>≤ 1.8 kV (N-PE)    | 2.5 A |



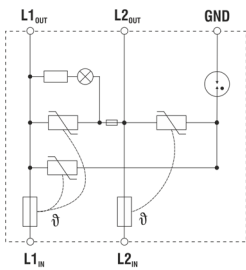
STLBT23-20K275V-C4-DD

### STLB

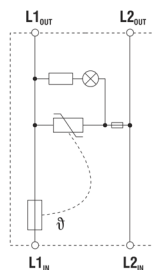
| Catalog number        | Item number | U <sub>n</sub> | U <sub>c</sub> | I <sub>max</sub> (8/20) | I <sub>n</sub> (8/20) | U <sub>oc</sub> | U <sub>p</sub> at I <sub>n</sub>  | IL    |
|-----------------------|-------------|----------------|----------------|-------------------------|-----------------------|-----------------|-----------------------------------|-------|
| <b>C4 (1Ph+N)</b>     |             |                |                |                         |                       |                 |                                   |       |
| STLBT23-20K275V-C4-DD | 83230321    | 230 VAC        | 275 V          | 20 kA                   | 10 kA                 | 20 kV           | ≤ 1.5 kV (L-N)<br>≤ 1.8 kV (N-PE) | 2.5 A |

## ELECTRICAL DIAGRAMS

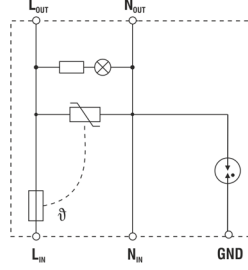
STL C12: 1Ph+N



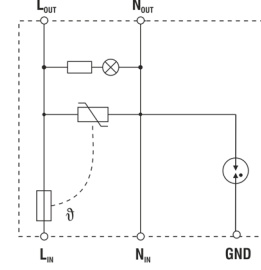
STL C2: 1Ph+N



STL C4: 1Ph+N



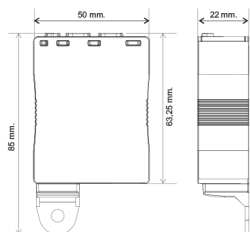
STLB C4: 1Ph+N



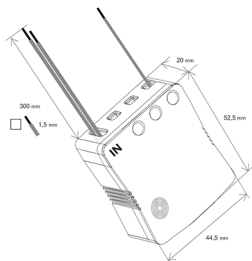
# Surge-Trap® Type 2+3 - for LED Lighting

## DIMENSIONS

### STLB



### STL



## RELATED SERIES



Surge-Trap® Monobloc STMT23 Series for fusebox



Surge-Trap® POP + SPD Type 2 - For Contactor

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