

BUYLOG SECTION 20

# Surge Protection Devices



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## Surge protection devices

### Introduction

Surge Protection Devices (SPDs) are designed to protect against transient surge conditions.

Transient surges can reach values of hundreds of thousands of volts or instantaneous current flow of tens of thousands of amperes, but typically last less than one hundred microseconds in duration.

Transient surges generated within a facility typically account for 80% of the surge activity.

These internally generated transients can be caused by switching power supplies (computers), electronic ballasts (building lighting) and variable frequency drives (air handlers, elevators, etc).

The most destructive transient voltage surges can be attributed to lightning and utility load switching; however, experts predict that these two events account for 20% of all transient surge activity.

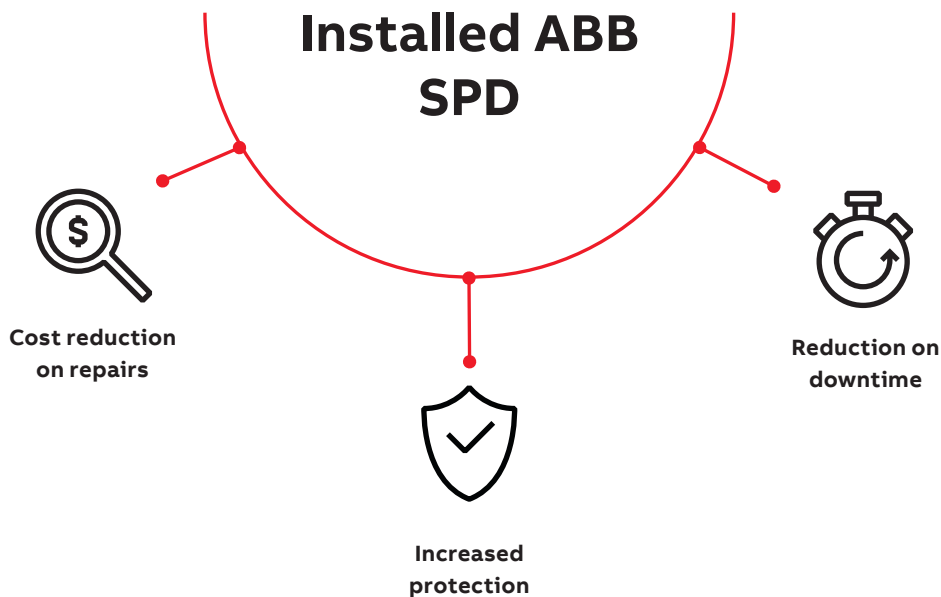
Reliable data sources suggest that lightning strikes have current magnitudes in excess of 200,000 amps. Moreover,

lightning strikes are not single strike events. Strikes typically consist of four to six “hits” and sometimes can be as high as 40kA.

Therefore, SPDs must be appropriately sized to provide adequate protection during multiple surge events.

Large transient surge conditions can damage printed circuit board traces and puncture semiconductors causing immediate or intermittent equipment failures. Continued exposure to surges can degrade printed circuit board traces or semiconductors resulting in seemingly random delayed equipment failures. Therefore, equipment failures cannot always be contributed to a single power quality event. Surge remnants on data lines can alter digital data and logic levels causing equipment failures and lockups.

**Professionally installed ABB products provide superior protection against transient surges preventing unnecessary downtime and costly repairs.**



## Legacy GE

### TPME series SPD



#### Wall-mount SPD with enhanced thermal protection

- UL Listed 1449 4th Edition, Type 1, Type 2
- cUL Listed, CSA C22.2
- UL 96A, for use in lightning protection systems
- Patented thermal fuse technology
- Standard features include a surge counter, audible alarm, indicating lights, dry contacts and NEMA 4 painted steel enclosure
- 10-year limited warranty

| Voltage                                     | Configuration            | Part number       |
|---|--------------------------|-------------------|
| 240/120                                     | 1-phase, 3-wire + ground | TPME120SxxxWMN    |
| 208Y/120                                    | 3-phase, 4-wire + ground | TPME120YxxxWMN    |
| 380Y/220                                    | 3-phase, 4-wire + ground | TPME220YxxxWMN    |
| 240 Delta                                   | 3-phase, 3-wire + ground | TPME240DxxxWMN    |
| 240/120 Hi-Leg Delta                        | 3-phase, 4-wire + ground | TPME240HxxxWMN    |
| 415Y/240                                    | 3-phase, 4-wire + ground | TPME240YxxxWMN    |
| 480Y/277                                    | 3-phase, 4-wire + ground | TPME277YxxxWMN    |
| 600Y/347                                    | 3-phase, 4-wire + ground | TPME347YxxxWMN    |
| 480 Delta                                   | 3-phase, 3-wire + ground | TPME480DxxxWMN    |
| Desired kA                                  |                          | xxx Code          |
| 65 per mode                                 |                          | 06                |
| 80 per mode                                 |                          | 08                |
| 100 per mode                                |                          | 10                |
| Options                                     | Weight                   | Suffix            |
| Painted steel, NEMA 4 without disconnect*   | 44 lbs. (20.0 kg)        | WMN4S / WMN4ST1** |
| Stainless steel, NEMA 4X without disconnect | 50 lbs. (22.7 kg)        | WMN4X / WMN4XT1** |
| Painted steel, NEMA 1 with disconnect       | 63 lbs. (28.5 kg)        | WMN1 / WMN1T1**   |
| Fiberglass, NEMA 4X with disconnect         | 56 lbs. (25.4 kg)        | WMN4 / WMN4**     |

\* Standard enclosure

| Electrical characteristics             |  |
|--|--|
| Maximum surge current rating           | xxx per phase/ half xxx per mode<br>130 kA per phase/ 65 kA per mode<br>160 kA per phase/ 80 kA per mode<br>200 kA per phase/ 100 kA per mode  |
| Nominal discharge current rating (L-N) | 20 kA  |
| Operating frequency                    | 50–60 Hz   |
| Surge life (IEEE C62.41 - C3 10 kA )   | ≥5,000 impulses  |
| Connection method                      | #6 to 2/0 AWG conductors, parallel connected   |
| Modes of protection                    | All modes (L-N, L-G, N-G, L-L)   |
| Fault rating (SCCR)                    | 200 kAIC   |
| Standard monitoring                    | Status indicator lights (one per phase) and red service light<br>Audible alarm with silencer and test switch<br>Contacts for remote monitoring (2 amp, 125 V AC)–(1 amp, 30 V DC)<br>6-digit LCD re-settable surge event counter |

| EMI / RFI filter attenuation  |  |
|-------------------------------|--|
| Maximum attenuation frequency | -50 dB at 100 kHz  |
| Mechanical characteristics    |  |
| Weight                        | Varies and depends on enclosure type                       |
| Enclosure type                | Varies on option chosen                                    |
| Installation location         | Service entrance equipment, primary distribution equipment |
| Mounting method               | Surface mount, 4-point mounting brackets                   |
| Operating temperature         | -40 °F to 149 °F (-40 °C to 65 °C)                         |
| Altitude                      | 0–12,000 ft. (3.66 km)                                     |
| Product design                | Individually fused thermally protected MOV technology      |

| Regulations and certifications |                                |
|--------------------------------|--------------------------------|
| UL 1449 4th edition            | VZCA: E320456 Type 1 / Type 2  |
| cUL, CSA C22.2                 | VZCA7: E320456 Type 2 / Type 2 |
| UL 1283                        | FOKY: E320456 Type 2           |
| UL 96A                         | Yes                            |
| IEEE C62.62, C62.72, C62.41    | Yes                            |
| Listed by                      | UL                             |

## Legacy GE

### TPHE series SPD



#### Wall-mount SPD with enhanced thermal protection

- UL Listed 1449 4th Edition, Type 1, Type 2
- cUL Listed, CSA C22.2
- UL 96A, for use in lightning protection systems
- Thermally protected MOV design eliminates the need for additional upstream over-current protection
- Standard features include a surge counter, audible alarm, indicating lights, dry contacts and NEMA 4 painted steel enclosure
- 10-year limited warranty

| Voltage                                     | Configuration            | Part number       |
|---|--------------------------|-------------------|
| 240/120                                     | 1-phase, 3-wire + ground | TPHE120SxxxWMN    |
| 208Y/120                                    | 3-phase, 4-wire + ground | TPHE120YxxxWMN    |
| 380Y/220                                    | 3-phase, 4-wire + ground | TPHE220YxxxWMN    |
| 240 Delta                                   | 3-phase, 3-wire + ground | TPHE240DxxxWMN    |
| 240/120 Hi-Leg Delta                        | 3-phase, 4-wire + ground | TPHE240HxxxWMN    |
| 415Y/240                                    | 3-phase, 4-wire + ground | TPHE240YxxxWMN    |
| 480Y/277                                    | 3-phase, 4-wire + ground | TPHE277YxxxWMN    |
| 600Y/347                                    | 3-phase, 4-wire + ground | TPHE347YxxxWMN    |
| 480 Delta                                   | 3-phase, 3-wire + ground | TPHE480DxxxWMN    |
| Desired kA                                  | xxx Code                 |                   |
| 125 per mode                                | 12                       |                   |
| 150 per mode                                | 15                       |                   |
| 200 per mode                                | 20                       |                   |
| 250 per mode                                | 25                       |                   |
| 300 per mode                                | 30                       |                   |
| Options                                     | Weight                   | Suffix            |
| Painted steel, NEMA 4 without disconnect*   | 44 lbs. (20.0 kg)        | WMN4S / WMN4ST1** |
| Stainless steel, NEMA 4X without disconnect | 50 lbs. (22.7 kg)        | WMN4X / WMN4XT1** |
| Painted steel, NEMA 1 with disconnect       | 63 lbs. (28.5 kg)        | WMN1 / WMN1T1**   |
| Fiberglass, NEMA 4X with disconnect         | 56 lbs. (25.4 kg)        | WMN4 / WMN4**     |

\* Standard enclosure

| Electrical characteristics             |  |
|--|--|
| Maximum surge current rating           | 250 kA per phase/ 125 kA per mode<br>300 kA per phase/ 150 kA per mode<br>400 kA per phase/ 200 kA per mode<br>500 kA per phase/ 250 kA per mode<br>600 kA per phase/ 300 kA per mode  |
| Nominal discharge current rating (L-N) | 20 kA  |
| Operating frequency                    | 50–60 Hz   |
| Surge life (IEEE C62.41 - C3 10 kA)    | ≥20,000 impulses   |
| Connection method                      | #6 to 2/0 AWG conductors, parallel connected   |
| Modes of protection                    | All modes (L-N, L-G, N-G, L-L)   |
| Fault rating (SCCR)                    | 200 kAIC   |
| Standard monitoring                    | Status indicator lights (one per phase) and red service light<br>Audible alarm with silencer and test switch<br>Contacts for remote monitoring (2 amp, 125 V AC)–(1 amp, 30 V DC)<br>6-digit LCD re-settable surge event counter |

| EMI / RFI filter attenuation  |                   |
|-------------------------------|-------------------|
| Maximum attenuation frequency | -50 dB at 100 kHz |

| Mechanical characteristics |  |
|----------------------------|--|
| Weight                     | Varies and depends on enclosure type                       |
| Enclosure type             | Varies on option chosen                                    |
| Installation location      | Service entrance equipment, primary distribution equipment |
| Mounting method            | Surface mount, 4-point mounting brackets                   |
| Operating temperature      | -40 °F to 149 °F (-40 °C to 65 °C)                         |
| Altitude                   | 0–12,000 ft. (3.66 km)                                     |
| Product design             | Individually fused thermally protected MOV technology      |

| Regulations and certifications |                                |
|--------------------------------|--------------------------------|
| UL 1449 4th edition            | VZCA: E320456 Type 1 / Type 2  |
| cUL, CSA C22.2                 | VZCA7: E320456 Type 2 / Type 2 |
| UL 1283                        | FOKY: E320456 Type 2           |
| UL 96A                         | Yes                            |
| IEEE C62.62, C62.72, C62.41    | Yes                            |
| Listed by                      | UL                             |

## Legacy GE

### TLE series SPD



#### Wall-mount SPD

- UL Listed 1449 4th Edition, Type 2
- cUL Listed, CSA C22.2
- Compact and economical design for use at medium-exposure distribution or branch panels
- Patented thermal fuse technology
- Standard features include status indicating LEDs, form C dry contacts for remote monitoring and NEMA 12 painted steel enclosure
- 10-year limited warranty

| Voltage                                       | Configuration            | Part number  |
|---|--------------------------|--------------|
| 240/120                                       | 1-phase, 3-wire + ground | TLE120SxxxWM |
| 208Y/120                                      | 3-phase, 4-wire + ground | TLE120YxxxWM |
| 380Y/220                                      | 3-phase, 4-wire + ground | TLE220YxxxWM |
| 240 Delta                                     | 3-phase, 3-wire + ground | TLE240DxxxWM |
| 240/120 Hi-Leg Delta                          | 3-phase, 4-wire + ground | TLE240HxxxWM |
| 415Y/240                                      | 3-phase, 4-wire + ground | TLE240YxxxWM |
| 480Y/277                                      | 3-phase, 4-wire + ground | TLE277YxxxWM |
| 480 Delta                                     | 3-phase, 3-wire + ground | TLE480DxxxWM |
| 600 Delta is offered in version on prior page |                          |              |
| Desired kA                                    | xxx Code                 |              |
| 25 per mode                                   | 025                      |              |
| 50 per mode                                   | 050                      |              |

| Electrical characteristics             |   |
|--|---|
| Maximum surge current rating           | xxx per phase/ half xxx per mode<br>50 kA per phase/ 25 kA per mode<br>100 kA per phase/ 50 kA per mode   |
| Nominal discharge current rating (L-N) | 10 kA   |
| Operating frequency                    | 50–60 Hz  |
| Surge life (IEEE C62.41 - C3 10 kA )   | ≥3,500 impulses   |
| Connection method                      | #10 AWG conductors, parallel connected  |
| Modes of protection                    | All modes (L-N, L-G, N-G, L-L)  |
| Fault rating (SCCR)                    | 65 kA (30 A breaker required)   |
| Standard monitoring                    | Status indicator lights (one per phase)<br>Standard dry (form C) relay contacts                           |
| Mechanical characteristics             |   |
| Weight                                 | 17 lbs. (7.7 kg)  |
| Enclosure type                         | Painted steel, NEMA 12  |
| Installation location                  | Secondary distribution equipment, branch panels – Rated for UL and NEC 2020 Type 2 installation locations |
| Mounting method                        | Dual mounting flanges / ¾" NPT offset nipple  |
| Operating temperature                  | -40 °F to 149 °F (-40 °C to 65 °C)  |
| Altitude                               | 0–12,000 ft. (3.66 km)  |
| Product design                         | Thermal fuse technology   |
| Regulations and certifications         |   |
| UL 1449 4th edition                    | VZCA: E320456 Type 2  |
| cUL, CSA C22.2                         | VZCA7: E320456 Type 2   |
| IEEE C62.62, C62.72                    | Yes   |
| Listed by                              | UL  |

## Legacy GE

### TME series SPD



#### Wall-mount SPD

- UL Listed 1449 4th Edition, Type 2
- cUL Listed, CSA C22.2
- UL 96A, for use in lightning protection systems
- Compact and economical design for use at medium-exposure distribution or branch panels
- Standard features include status indicating LEDs, form C dry contacts for remote monitoring and NEMA 12 painted steel enclosure
- 10-year limited warranty

| Voltage              | Configuration            | Part number  |
|----------------------|--------------------------|--------------|
| 240/120              | 1-phase, 3-wire + ground | TME120SxxxWM |
| 208Y/120             | 3-phase, 4-wire + ground | TME120YxxxWM |
| 380Y/220             | 3-phase, 4-wire + ground | TME220YxxxWM |
| 240 Delta            | 3-phase, 3-wire + ground | TME240DxxxWM |
| 240/120 Hi-Leg Delta | 3-phase, 4-wire + ground | TME240HxxxWM |
| 415Y/240             | 3-phase, 4-wire + ground | TME240YxxxWM |
| 480Y/277             | 3-phase, 4-wire + ground | TME277YxxxWM |
| 480 Delta            | 3-phase, 3-wire + ground | TME480DxxxWM |
| <b>Desired kA</b>    | <b>xxx Code</b>          |              |
| 65 per mode          | 065                      |              |
| 80 per mode          | 080                      |              |
| 100 per mode         | 100                      |              |

| Electrical characteristics             |   |
|--|---|
| Maximum surge current rating           | xxx per phase/ half xxx per mode<br>130 kA per phase/ 65 kA per mode<br>160 kA per phase/ 80 kA per mode<br>200 kA per phase/ 100 kA per mode |
| Nominal discharge current rating (L-N) | 20 kA   |
| Operating frequency                    | 50–60 Hz  |
| Surge life (IEEE C62.41 - C3 10 kA)    | ≥5,000 impulses   |
| Connection method                      | #10 AWG conductors, parallel connected  |
| Modes of protection                    | All modes (L-N, L-G, N-G, L-L)  |
| Fault rating (SCCR)                    | 65 kA (30 A breaker required)   |
| Standard monitoring                    | Status indicator lights (one per phase)<br>Standard dry (form C) relay contacts   |
| EMI / RFI filter attenuation           |   |
| Maximum attenuation frequency          | -44 dB at 50 kHz–100 MHz  |
| Mechanical characteristics             |   |
| Weight                                 | 17 lbs. (7.7 kg)  |
| Enclosure type                         | Painted steel, NEMA 12  |
| Installation location                  | Service entrance equipment, primary distribution equipment – Rated for UL and NEC 2020 Type 2 installation locations                          |
| Mounting method                        | Dual mounting flanges / ¾" NPT offset nipple  |
| Operating temperature                  | -40 °F to 149 °F (-40 °C to 65 °C)  |
| Altitude                               | 0–12,000 ft. (3.66 km)  |
| Product design                         | Thermal fuse technology   |
| Regulations and certifications         |   |
| UL 1449 4th edition                    | VZCA: E320456 Type 2  |
| cUL, CSA C22.2                         | VZCA7: E320456 Type 2   |
| UL 1283                                | FOKY: E320456 Type 2  |
| UL 96A                                 | Yes   |
| IEEE C62.62, C62.72                    | Yes   |
| Listed by                              | UL  |



## Legacy GE

### TPME A series integrated SPD



#### Designed to connect within ReliaGear™ panelboards

- UL Listed 1449 4th Edition, Type 1, Type 2
- cUL, CSA C22.2
- Factory installed in GE® A Series™ panels
- Connects directly to the A Series panelboard bus bars
- Standard features include a surge counter, audible alarm, indicating lights, dry contacts and NEMA 4 painted steel enclosure
- 10-year limited warranty

| Voltage  | Configuration            | Part number |
|--|--------------------------|-------------|
| 240/120  | 1-phase, 3-wire + ground | TPME120Sxx* |
| 208Y/120   | 3-phase, 4-wire + ground | TPME120Yxx* |
| 240 Delta  | 3-phase, 3-wire + ground | TPME240Dxx* |
| 240/120 Hi-Leg Delta   | 3-phase, 4-wire + ground | TPME240Hxx* |
| 415Y/240   | 3-phase, 4-wire + ground | TPME240Yxx* |
| 480Y/277   | 3-phase, 4-wire + ground | TPME277Yxx* |
| 380Y/220   | 3-phase, 4-wire + ground | TPME220Yxx* |
| 600Y/347   | 3-phase, 4-wire + ground | TPME347Yxx* |
| 480 Delta  | 3-phase, 3-wire + ground | TPME480Dxx* |
| Desired kA   |                          | xx Code     |
| 65 per mode  |                          | 06          |
| 80 per mode  |                          | 08          |
| 100 per mode   |                          | 10          |
| Options (*)  |                          | Suffix (*)  |
| With UL 1283 noise filter and surge counter *  |                          | AS          |
| Without UL 1283 noise filtering only (available in 100 kA per mode only)             |                          | ASNF        |
| Without UL 1283 noise filter and surge counter (available in 100 kA per mode only)   |                          | ASNC        |
| AST1   |                          |             |
| Full featured with UL 1283 noise filtering and surge counter for UL Type 1 locations |                          |             |

\* Standard option

| Electrical characteristics             |  |
|--|--|
| Maximum surge current rating           | xxx per phase/ half xxx per mode mode<br>130 kA per phase/ 65 kA per mode<br>160 kA per phase/ 80 kA per mode<br>200 kA per phase/ 100 kA per mode   |
| Nominal discharge current rating (L-N) | 20 kA  |
| Operating frequency                    | 50–60 Hz   |
| Surge life (IEEE C62.41 - C3 10 kA)    | ≥5,000 impulses  |
| Connection method                      | #6 to 2/0 AWG conductors, parallel connected   |
| Modes of protection                    | All modes (L-N, L-G, N-G, L-L)   |
| Fault rating (SCCR)                    | 200 kAIC   |
| Standard monitoring                    | Status indicator lights (one per phase) and red service light<br>Audible alarm with silencer and test switch<br>Contacts for remote monitoring (2 amp, 125 V AC)–(1 amp, 30 V DC)<br>6-digit LCD re-settable surge event counter |

| EMI / RFI filter attenuation  |  |
|-------------------------------|--|
| Maximum attenuation frequency | -50 dB at 100 kHz  |
| Mechanical characteristics    |  |
| Weight                        | 13 lbs. (5.9 kg)   |
| Enclosure type                | Painted steel, NEMA 12   |
| Installation location         | Service entrance equipment, primary distribution equipment, secondary distribution equipment, lighting panels – Rated for UL and NEC 2008 Type 1 and Type 2 installation locations |
| Mounting method               | Bolts onto electrical panel interior frame   |
| Operating temperature         | -40 °F to 149 °F (-40 °C to 65 °C)   |
| Altitude                      | 0–12,000 ft. (3.66 km)   |
| Product design                | Individually fused thermally protected MOV technology  |

| Regulations and certifications |                                |
|--------------------------------|--------------------------------|
| UL 1449 4th edition            | VZCA2: E320456 Type 1 / Type 2 |
| cUL, CSA C22.2                 | VZCA8: E320456 Type 1 / Type 2 |
| UL 1283                        | FOKY2: E320456 Type 2          |
| UL 96A                         | Yes                            |
| IEEE C62.62, C62.72, C62.41    | Yes                            |
| Listed by                      | UL                             |

## Legacy GE

### TPHE series integrated SPD



#### Designed for ABB distribution equipment

- UL Listed 1449 4th Edition, Type 1, Type 2
- cUL, CSA C22.2
- Connect to the panelboard or switchboard bus bars
- Thermally protected MOV design eliminates the need for additional upstream over-current protection
- Standard features include a surge counter, audible alarm, indicating lights, dry contacts and NEMA 4 painted steel enclosure
- 10-year limited warranty

| Voltage                   | Configuration            | Part number |            |
|---------------------------|--------------------------|-------------|------------|
| 240/120                   | 1-phase, 3-wire + ground | TPHE120Sxx* |            |
| 208Y/120                  | 3-phase, 4-wire + ground | TPHE120Yxx* |            |
| 380Y/220                  | 3-phase, 4-wire + ground | TPHE220Yxx* |            |
| 240 Delta                 | 3-phase, 3-wire + ground | TPHE240Dxx* |            |
| 240/120 Hi-Leg Delta      | 3-phase, 4-wire + ground | TPHE240Hxx* |            |
| 415Y/240                  | 3-phase, 4-wire + ground | TPHE240Yxx* |            |
| 480Y/277                  | 3-phase, 4-wire + ground | TPHE277Yxx* |            |
| 600Y/347                  | 3-phase, 4-wire + ground | TPHE347Yxx* |            |
| 480 Delta                 | 3-phase, 3-wire + ground | TPHE480Dxx* |            |
| Desired kA                |                          | xx Code     |            |
| 65 per mode               |                          | 06          |            |
| 80 per mode               |                          | 08          |            |
| 100 per mode              |                          | 10          |            |
| Options                   | Mounting                 | UL Type     | Suffix (*) |
| ABB Spectra power panels  | Integral                 | Type 2      | PP         |
| ABB motor control centers | Integral                 | Type 2      | ME         |
| ABB LV switchgear         | Integral                 | Type 2      | SG         |
| ABB Spectra power panels  | Integral                 | Type 1      | PPT1       |
| ABB motor control centers | Integral                 | Type 1      | MET1       |
| ABB LV switchgear         | Integral                 | Type 1      | SGT1       |

| Electrical characteristics             |  |
|--|--|
| Maximum surge current rating           | xxx per phase/ half xxx per mode<br>130 kA per phase/ 65 kA per mode<br>160 kA per phase/ 80 kA per mode<br>200 kA per phase/ 100 kA per mode  |
| Nominal discharge current rating (L-N) | 20 kA  |
| Operating frequency                    | 50–60 Hz   |
| Surge life (IEEE C62.41 - C3 10 kA )   | ≥5,000 impulses  |
| Connection method                      | #6 to 2/0 AWG conductors, parallel connected   |
| Modes of protection                    | All modes (L-N, L-G, N-G, L-L)   |
| Fault rating (SCCR)                    | 200 kAIC   |
| Standard monitoring                    | Status indicator lights (one per phase) and red service light<br>Audible alarm with silencer and test switch<br>Contacts for remote monitoring (2 amp, 125 V AC)–(1 amp, 30 V DC)<br>6-digit LCD re-settable surge event counter |
| EMI / RFI filter attenuation           |  |
| Maximum attenuation frequency          | -50 dB at 100 kHz  |
| Mechanical characteristics             |  |
| Weight                                 | 24 lbs. (10.89 kg)   |
| Installation location                  | Service entrance equipment, primary distribution equipment – Rated for UL and NEC 2008 Type 1 and Type 2 installation locations  |
| Mounting method                        | Bolts onto electrical panel interior frame   |
| Operating temperature                  | -40 °F to 149 °F (-40 °C to 65 °C)   |
| Altitude                               | 0–12,000 ft. (3.66 km)   |
| Product design                         | Individually fused thermally protected MOV technology  |
| Regulations and certifications         |  |
| UL 1449 4th edition                    | VZCA2: E320456 Type 1 / Type 2   |
| cUL, CSA C22.2                         | VZCA8: E320456 Type 1 / Type 2   |
| UL 1283                                | FOKY2: E320456 Type 2  |
| UL 96A                                 | Yes  |
| IEEE C62.62, C62.72, C62.41            | Yes  |
| Listed by                              | UL   |

## Legacy GE

### TPME series integrated SPD



#### Designed for ABB distribution equipment

- UL Listed 1449 4th Edition, Type 2
- cUL, CSA C22.2
- Connect to the panelboard or switchboard bus bars
- Thermally protected MOV design eliminates the need for additional upstream over-current protection
- Standard features include a surge counter, audible alarm, indicating lights, dry contacts and integral surge-rated disconnect
- 10-year limited warranty

| Voltage                   | Configuration            | Part number |            |
|---------------------------|--------------------------|-------------|------------|
| 240/120                   | 1-phase, 3-wire + ground | TPME120Sxx* |            |
| 208Y/120                  | 3-phase, 4-wire + ground | TPME120Yxx* |            |
| 380Y/220                  | 3-phase, 4-wire + ground | TPME220Yxx* |            |
| 240 Delta                 | 3-phase, 3-wire + ground | TPME240Dxx* |            |
| 240/120 Hi-Leg Delta      | 3-phase, 4-wire + ground | TPME240Hxx* |            |
| 415Y/240                  | 3-phase, 4-wire + ground | TPME240Yxx* |            |
| 480Y/277                  | 3-phase, 4-wire + ground | TPME277Yxx* |            |
| 600Y/347                  | 3-phase, 4-wire + ground | TPME347Yxx* |            |
| 480 Delta                 | 3-phase, 3-wire + ground | TPME480Dxx* |            |
| Desired kA                | xx Code                  |             |            |
| 125 per mode              | 12                       |             |            |
| 150 per mode              | 15                       |             |            |
| 200 per mode              | 20                       |             |            |
| 250 per mode              | 25                       |             |            |
| 300 per mode              | 30                       |             |            |
| Options                   | Mounting                 | UL Type     | Suffix (*) |
| ABB Spectra power panels  | Integral                 | Type 2      | PP         |
| ABB motor control centers | Integral                 | Type 2      | ME         |
| ABB LV switchgear         | Integral                 | Type 2      | SG         |
| ABB Spectra power panels  | Integral                 | Type 1      | PPT1       |
| ABB motor control centers | Integral                 | Type 1      | MET1       |
| ABB LV switchgear         | Integral                 | Type 1      | SGT1       |

| Electrical characteristics             |  |
|--|--|
| Maximum surge current rating           | xxx per phase/ half xxx per mode<br>250 kA per phase/ 125 kA per mode<br>300 kA per phase/ 150 kA per mode<br>400 kA per phase/ 200 kA per mode<br>500 kA per phase/ 250 kA per mode<br>600 kA per phase/ 300 kA per mode        |
| Nominal discharge current rating (L-N) | 20 kA  |
| Operating frequency                    | 50–60 Hz   |
| Surge life (IEEE C62.41 - C3 10 kA)    | ≥20,000 impulses   |
| Connection method                      | #6 to 2/0 AWG conductors, parallel connected   |
| Modes of protection                    | All modes (L-N, L-G, N-G, L-L)   |
| Fault rating (SCCR)                    | 200 kAIC   |
| Standard monitoring                    | Status indicator lights (one per phase) and red service light<br>Audible alarm with silencer and test switch<br>Contacts for remote monitoring (2 amp, 125 V AC)–(1 amp, 30 V DC)<br>6-digit LCD re-settable surge event counter |
| EMI / RFI filter attenuation           |  |
| Maximum attenuation frequency          | -50 dB at 100 kHz  |
| Mechanical characteristics             |  |
| Weight                                 | 24 lbs. (10.89 kg)   |
| Installation location                  | Service entrance equipment, primary distribution equipment – Rated for UL and NEC 2020 Type 1 and Type 2 installation locations  |
| Mounting method                        | Bolts onto electrical panel interior frame   |
| Operating temperature                  | -40 °F to 149 °F (-40 °C to 65 °C)   |
| Altitude                               | 0–12,000 ft. (3.66 km)   |
| Product design                         | Individually fused thermally protected MOV technology  |
| Regulations and certifications         |  |
| UL 1449 4th edition                    | VZCA2: E320456 Type 1 / Type 2   |
| UL 1283                                | VZCA8: E320456 Type 1 / Type 2   |
| cUL, CSA C22.2                         | FOKY2: E320456 Type 2  |
| UL 96A                                 | Yes  |
| IEEE C62.62, C62.72, C62.41            | Yes  |
| Listed by                              | UL   |

## Legacy GE

### 9" box extension SPD



#### Designed for ABB distribution equipment

- UL Listed 1449 4th Edition, Type 2
- cUL, CSA C22.2
- The 9" box extension SPD is field installed and attaches neatly to the top or bottom of a standard panel
- The true maximum surge current rating, unlimited by fusing, has been proven successful in third-party tests
- Standard features include a surge counter, audible alarm, indicating lights and dry contacts
- 10-year limited warranty

| Voltage                         | Configuration            | Part number       |
|---------------------------------|--------------------------|-------------------|
| 240/120                         | 1-phase, 3-wire + ground | TPME120SxxBX*     |
| 208Y/120                        | 3-phase, 4-wire + ground | TPME120YxxBX*     |
| 380Y/220                        | 3-phase, 4-wire + ground | TPME220YxxBX*     |
| 240 Delta                       | 3-phase, 3-wire + ground | TPME240DxxBX*     |
| 240/120 Hi-Leg Delta            | 3-phase, 4-wire + ground | TPME240HxxBX*     |
| 415Y/240                        | 3-phase, 4-wire + ground | TPME240YxxBX*     |
| 480Y/277                        | 3-phase, 4-wire + ground | TPME277YxxBX*     |
| 600Y/347                        | 3-phase, 4-wire + ground | TPME347YxxBX*     |
| 480 Delta                       | 3-phase, 3-wire + ground | TPME480DxxBX*     |
| <b>Desired kA</b>               |                          | <b>xx Code</b>    |
| 65 per mode                     |                          | 06                |
| 80 per mode                     |                          | 08                |
| 100 per mode                    |                          | 10                |
| <b>Options</b>                  |                          | <b>Suffix (*)</b> |
| Surface mounted, no display     |                          | 9S                |
| Surface mounted, display access |                          | 9WS               |
| Flush mounted, no display       |                          | 9F                |
| Flush mounted, display access   |                          | 9WF               |

| Electrical characteristics             |  |
|--|--|
| Maximum surge current rating           | xxx per phase/ half xxx per mode<br>130 kA per phase/ 65 kA per mode<br>160 kA per phase/ 80 kA per mode<br>200 kA per phase/ 100 kA per mode  |
| Nominal discharge current rating (L-N) | 20 kA  |
| Operating frequency                    | 50–60 Hz   |
| Connection method                      | #6 to 2/0 AWG conductors, parallel connected<br>Note: A dedicated circuit breaker, rated 60 A or above, is recommended to provide a local disconnecting means for the SPD.   |
| Modes of protection                    | All modes (L-N, L-G, N-G, L-L)   |
| Fault rating (SCCR)                    | 65 kAIC  |
| Standard monitoring                    | Status indicator lights (one per phase) and red service light<br>Audible alarm with silencer and test switch<br>Contacts for remote monitoring (2 amp, 125 V AC)–(1 amp, 30 V DC)<br>6-digit LCD re-settable surge event counter |

| EMI / RFI filter attenuation  |                   |
|-------------------------------|-------------------|
| Maximum attenuation frequency | -50 dB at 100 kHz |

| Mechanical characteristics |  |
|----------------------------|--|
| Weight                     | 31 lbs. (14.1 kg)  |
| Enclosure type             | NEMA 1   |
| Installation location      | Service entrance equipment, primary distribution equipment - Rated for UL and NEC 2020 Type 2 installation locations |
| Mounting method            | Either top or bottom of A-Series panelboard only   |
| Operating temperature      | -40 °F to 149 °F (-40°C to 65 °C)  |
| Altitude                   | 0–12,000 ft. (3.66 km)   |
| Product design             | Individually fused thermally protected MOV technology  |

| Regulations and certifications |                       |
|--------------------------------|-----------------------|
| UL 1449 4th edition            | XUPD.E248748 Type 2   |
| UL 1283                        | Yes                   |
| UL 96A                         | Yes                   |
| cUL, CSA C22.2                 | VZCA7: E320456 Type 2 |
| IEEE C62.62, C62.72            | Yes                   |
| Listed by                      | UL                    |

## Legacy GE

### 9" box extension SPD



#### Designed for ABB distribution equipment

- UL Listed 1449 4th Edition, Type 2
- cUL, CSA C22.2
- The 9" box extension SPD is field installed and attaches neatly to the top or bottom of a standard panel
- The true maximum surge current rating, unlimited by fusing, has been proven successful in third-party tests
- Standard features include a surge counter, audible alarm, indicating lights and dry contacts
- 10-year limited warranty

| Voltage                         | Configuration            | Part number   |
|---------------------------------|--------------------------|---------------|
| 240/120                         | 1-phase, 3-wire + ground | TPHE120SxxBX* |
| 208Y/120                        | 3-phase, 4-wire + ground | TPHE120YxxBX* |
| 380Y/220                        | 3-phase, 4-wire + ground | TPHE220YxxBX* |
| 240 Delta                       | 3-phase, 3-wire + ground | TPHE240DxxBX* |
| 240/120 Hi-Leg Delta            | 3-phase, 4-wire + ground | TPHE240HxxBX* |
| 415Y/240                        | 3-phase, 4-wire + ground | TPHE240YxxBX* |
| 480Y/277                        | 3-phase, 4-wire + ground | TPHE277YxxBX* |
| 600Y/347                        | 3-phase, 4-wire + ground | TPHE347YxxBX* |
| 480 Delta                       | 3-phase, 3-wire + ground | TPHE480DxxBX* |
| Desired kA                      | xx Code                  |               |
| 150 per mode                    | 15                       |               |
| 200 per mode                    | 20                       |               |
| 300 per mode                    | 30                       |               |
| Options                         | Suffix (*)               |               |
| Surface mounted, no display     | 9S                       |               |
| Surface mounted, display access | 9WS                      |               |
| Flush mounted, no display       | 9F                       |               |
| Flush mounted, display access   | 9WF                      |               |

| Electrical characteristics             |  |
|--|--|
| Maximum surge current rating           | xxx per phase/ half xxx per mode<br>300 kA phase/150 kA per mode<br>400 kA phase/200 kA per mode<br>600 kA phase/300 kA per mode   |
| Nominal discharge current rating (L-N) | 20 kA  |
| Operating frequency                    | 50–60 Hz   |
| Connection method                      | #6 to 2/0 AWG conductors, parallel connected<br>Note: A dedicated circuit breaker, rated 60 A or above, is recommended to provide a local disconnecting means for the SPD.   |
| Modes of protection                    | All modes (L-N, L-G, N-G, L-L)   |
| Fault rating (SCCR)                    | 65 kAIC  |
| Standard monitoring                    | Status indicator lights (one per phase) and red service light<br>Audible alarm with silencer and test switch<br>Contacts for remote monitoring (2 amp, 125 V AC)–(1 amp, 30 V DC)<br>6-digit LCD re-settable surge event counter |

| EMI / RFI filter attenuation  |                   |
|-------------------------------|-------------------|
| Maximum attenuation frequency | -50 dB at 100 kHz |

| Mechanical characteristics |  |
|----------------------------|--|
| Weight                     | 31 lbs. (14.1 kg)  |
| Enclosure type             | NEMA 1   |
| Installation location      | Service entrance equipment, primary distribution equipment - Rated for UL and NEC 2020 Type 2 installation locations |
| Mounting method            | Either top or bottom of A-Series panelboard only   |
| Operating temperature      | -40 °F to 149 °F (-40°C to 65 °C)  |
| Altitude                   | 0–12,000 ft. (3.66 km)   |
| Product design             | Individually fused thermally protected MOV technology  |

| Regulations and certifications |                       |
|--------------------------------|-----------------------|
| UL 1449 4th edition            | XUPD.E248748 Type 2   |
| UL 1283                        | Yes                   |
| UL 96A                         | Yes                   |
| cUL, CSA C22.2                 | VZCA7: E320456 Type 2 |
| IEEE C62.62, C62.72            | Yes                   |
| Listed by                      | UL                    |

## Legacy GE

### 24" box extension SPD



#### Designed for ABB distribution equipment

- UL Listed 1449 4th Edition for Type 2 applications
- cUL, CSA C22.2
- This model is installed in an extended box and connects to the panelboard
- The true maximum surge current rating, unlimited by fusing, has been proven successful in third-party tests
- Standard features include a surge counter, audible alarm, indicating lights and dry contacts
- 10-year limited warranty

| Voltage                         | Configuration            | Part number   |
|---------------------------------|--------------------------|---------------|
| 240/120                         | 1-phase, 3-wire + ground | TPME120SxxBX* |
| 208Y/120                        | 3-phase, 4-wire + ground | TPME120YxxBX* |
| 380Y/220                        | 3-phase, 4-wire + ground | TPME220YxxBX* |
| 240 Delta                       | 3-phase, 3-wire + ground | TPME240DxxBX* |
| 240/120 Hi-Leg Delta            | 3-phase, 4-wire + ground | TPME240HxxBX* |
| 415Y/240                        | 3-phase, 4-wire + ground | TPME240YxxBX* |
| 480Y/277                        | 3-phase, 4-wire + ground | TPME277YxxBX* |
| 600Y/347                        | 3-phase, 4-wire + ground | TPME347YxxBX  |
| 480 Delta                       | 3-phase, 3-wire + ground | TPME480DxxBX  |
| Desired kA                      | xx Code                  |               |
| 65 per mode                     | 06                       |               |
| 80 per mode                     | 08                       |               |
| 100 per mode                    | 10                       |               |
| Options                         | Suffix (*)               |               |
| Surface mounted, display access | 24WS                     |               |
| Flush mounted, display access   | 24WF                     |               |

| Electrical characteristics             |  |
|--|--|
| Maximum surge current rating           | xxx per phase/ half xxx per mode<br>130 kA phase/65 kA per mode<br>160 kA phase/80 kA per mode<br>200 kA phase/100 kA per mode   |
| Nominal discharge current rating (L-N) | 20 kA  |
| Operating frequency                    | 50–60 Hz   |
| Connection method                      | #6 to 2/0 AWG conductors, parallel connected<br>Note: A dedicated circuit breaker, rated 60 A or above, is recommended to provide a local disconnecting means for the SPD.   |
| Modes of protection                    | All modes (L-N, L-G, N-G, L-L)   |
| Fault rating (SCCR)                    | 200 kAIC   |
| Standard monitoring                    | Status indicator lights (one per phase) and red service light<br>Audible alarm with silencer and test switch<br>Contacts for remote monitoring (2 amp, 125 V AC)–(1 amp, 30 V DC)<br>6-digit LCD re-settable surge event counter |
| EMI / RFI filter attenuation           |  |
| Maximum attenuation frequency          | -50 dB at 100 kHz  |
| Mechanical characteristics             |  |
| Weight                                 | 57 lbs. (25.9 kg)  |
| Enclosure type                         | NEMA 1   |
| Installation location                  | Service entrance equipment, primary distribution equipment – Rated for UL and NEC 2020 Type 2 installation locations   |
| Mounting method                        | Either top or bottom of A-Series panelboard only   |
| Operating temperature                  | -40 °F to 149 °F (-40 °C to 65 °C)   |
| Altitude                               | 0–12,000 ft. (3.66 km)   |
| Product design                         | Individually fused thermally protected MOV technology  |
| Regulations and certifications         |  |
| UL 1449 4th edition                    | XUPD.E248748 Type 2  |
| UL 1283                                | Yes  |
| UL 96A                                 | Yes  |
| cUL, CSA C22.2                         | VZCA7: E320456 Type 2  |
| IEEE C62.62, C62.72                    | Yes  |
| Listed by                              | UL   |

## Legacy GE

### 24" box extension SPD



#### Designed for ABB distribution equipment

- UL Listed 1449 4th Edition for Type 2 applications
- cUL, CSA C22.2
- This model is installed in an extended box and connects to the panelboard
- The true maximum surge current rating, unlimited by fusing, has been proven successful in third-party tests
- Standard features include a surge counter, audible alarm, indicating lights and dry contacts
- 10-year limited warranty

| Voltage                         | Configuration            | Part number   |
|---------------------------------|--------------------------|---------------|
| 240/120                         | 1-phase, 3-wire + ground | TPHE120SxxBX* |
| 208Y/120                        | 3-phase, 4-wire + ground | TPHE120YxxBX* |
| 380Y/220                        | 3-phase, 4-wire + ground | TPHE220YxxBX* |
| 240 Delta                       | 3-phase, 3-wire + ground | TPHE240DxxBX* |
| 240/120 Hi-Leg Delta            | 3-phase, 4-wire + ground | TPHE240HxxBX* |
| 415Y/240                        | 3-phase, 4-wire + ground | TPHE240YxxBX* |
| 480Y/277                        | 3-phase, 4-wire + ground | TPHE277YxxBX* |
| 600Y/347                        | 3-phase, 4-wire + ground | TPHE347YxxBX  |
| 480 Delta                       | 3-phase, 3-wire + ground | TPHE480DxxBX  |
| Desired kA                      | xx Code                  |               |
| 150 per mode                    | 15                       |               |
| 200 per mode                    | 20                       |               |
| 300 per mode                    | 30                       |               |
| Options                         | Suffix (*)               |               |
| Surface mounted, display access | 24WS                     |               |
| Flush mounted, display access   | 24WF                     |               |

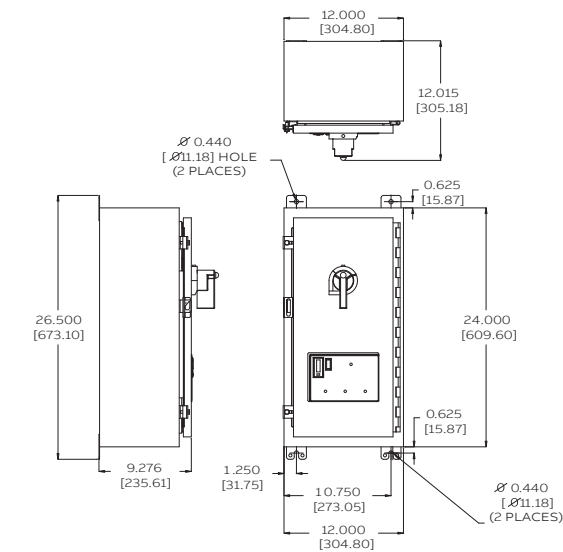
| Electrical characteristics             |  |
|--|--|
| Maximum surge current rating           | xxx per phase/ half xxx per mode<br>300 kA per phase/ 150 kA per mode<br>400 kA per phase/ 200 kA per mode<br>600 kA per phase/ 300 kA per mode  |
| Nominal discharge current rating (L-N) | 20 kA  |
| Operating frequency                    | 50–60 Hz   |
| Connection method                      | #6 to 2/0 AWG conductors, parallel connected<br>Note: A dedicated circuit breaker, rated 60 A or above, is recommended to provide a local disconnecting means for the SPD.   |
| Modes of protection                    | All modes (L-N, L-G, N-G, L-L)   |
| Fault rating (SCCR)                    | 200 kAIC   |
| Standard monitoring                    | Status indicator lights (one per phase) and red service light<br>Audible alarm with silencer and test switch<br>Contacts for remote monitoring (2 amp, 125 V AC)–(1 amp, 30 V DC)<br>6-digit LCD re-settable surge event counter |
| EMI / RFI filter attenuation           |  |
| Maximum attenuation frequency          | -50 dB at 100 kHz  |
| Mechanical characteristics             |  |
| Weight                                 | 57 lbs. (25.9 kg)  |
| Enclosure type                         | NEMA 1   |
| Installation location                  | Service entrance equipment, primary distribution equipment – Rated for UL and NEC 2020 Type 2 installation locations   |
| Mounting method                        | Either top or bottom of A-Series panelboard only   |
| Operating temperature                  | -40 °F to 149 °F (-40 °C to 65 °C)   |
| Altitude                               | 0–12,000 ft. (3.66 km)   |
| Product design                         | Individually fused thermally protected MOV technology  |
| Regulations and certifications         |  |
| UL 1449 4th edition                    | XUPD.E248748 Type 2  |
| UL 1283                                | Yes  |
| UL 96A                                 | Yes  |
| cUL, CSA C22.2                         | VZCA7: E320456 Type 2  |
| IEEE C62.62, C62.72                    | Yes  |
| Listed by                              | UL   |



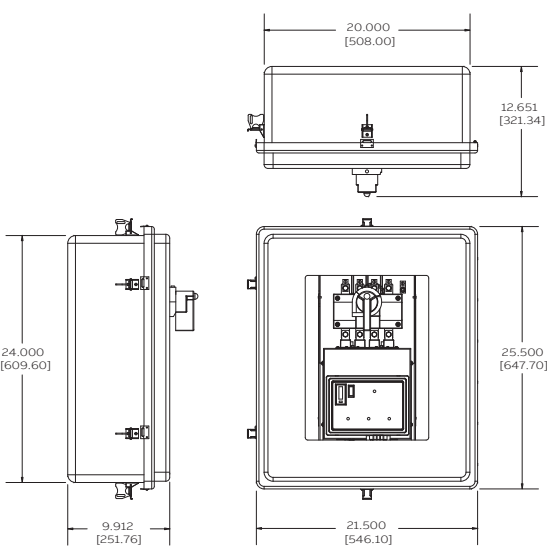
Legacy GE product

Dimensions

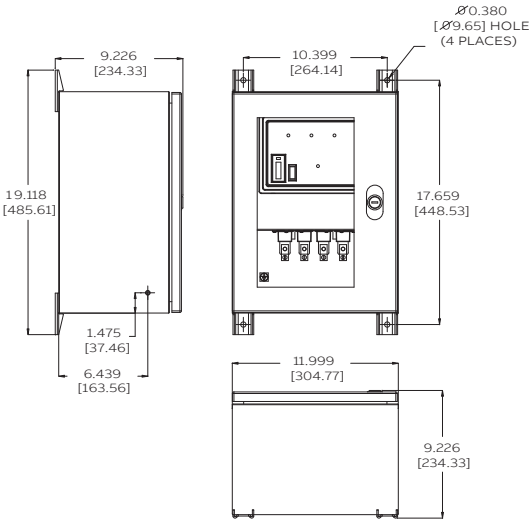
TPME and TPHE series wall-mount SPDs with enhanced thermal protection



WMN1 dimensions



WMN4 dimensions



WMN4S, WMN4X dimensions

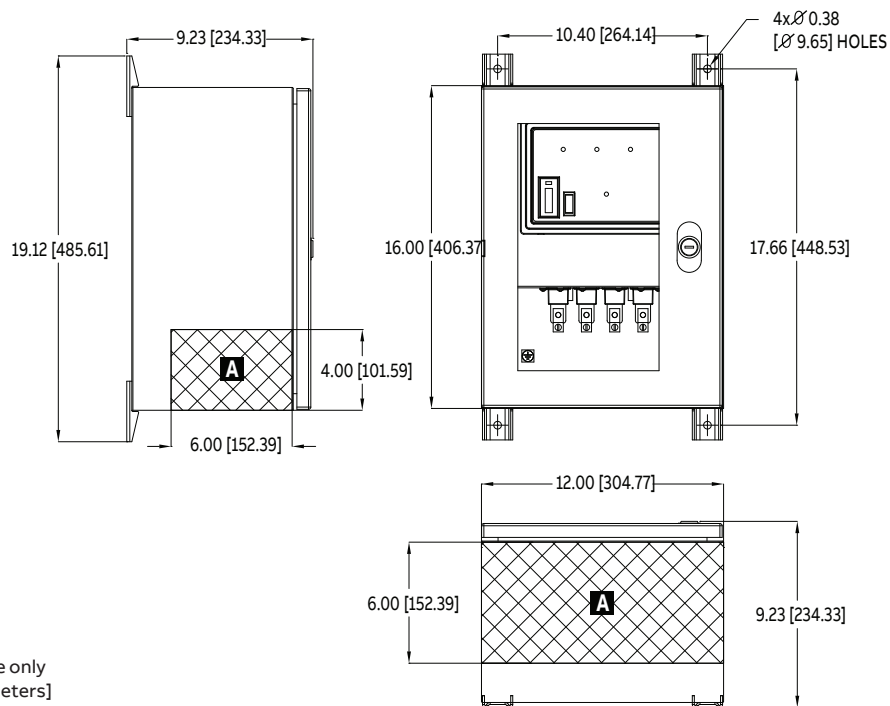


## Legacy GE product

### Dimensions

#### THE and TME series wall-mount SPDs

#### WMN4S, WMN4X Suffix



#### NOTE

All dimensions are for reference only  
and are shown in Inches [millimeters]

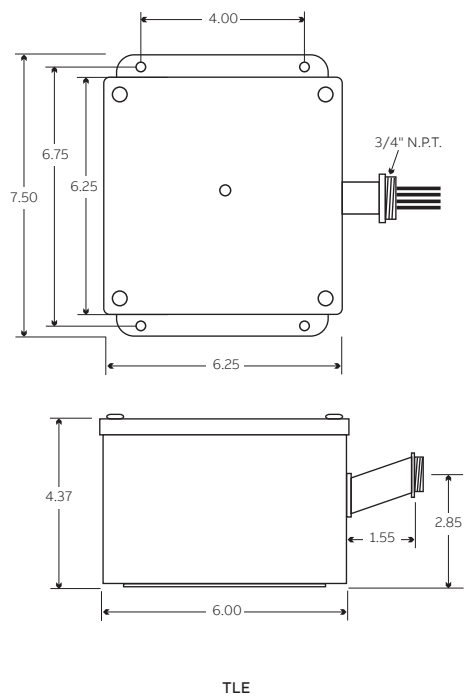
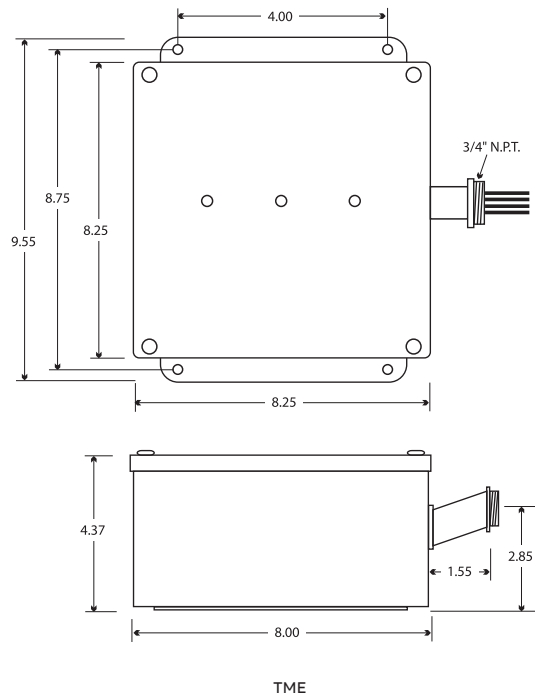
"A" = Recommended conduit entry areas

Refer to instruction manual for details

Legacy GE product

Dimensions

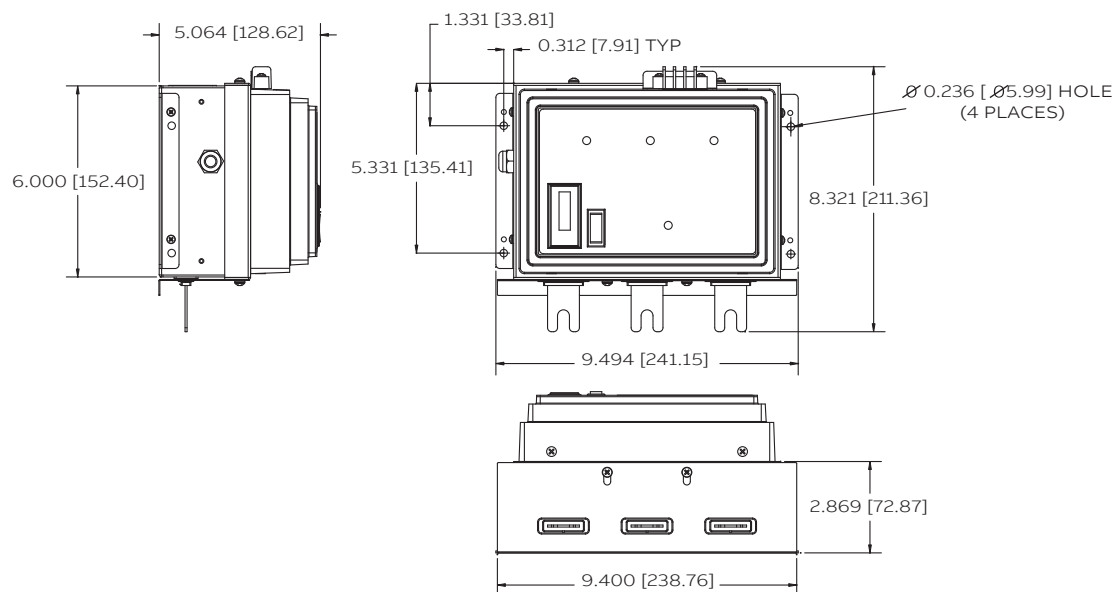
TME and TLE series wall-mount SPDs



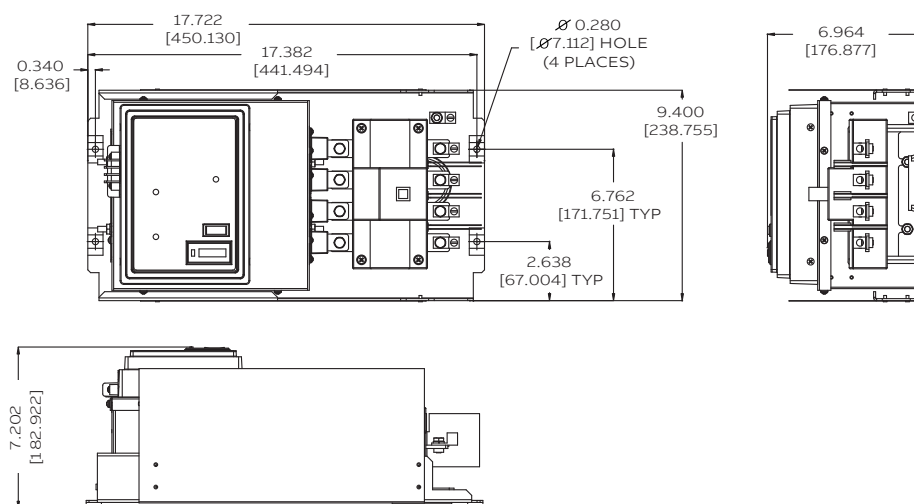
## Legacy GE product

### Dimensions

#### TPME series integrated SPD



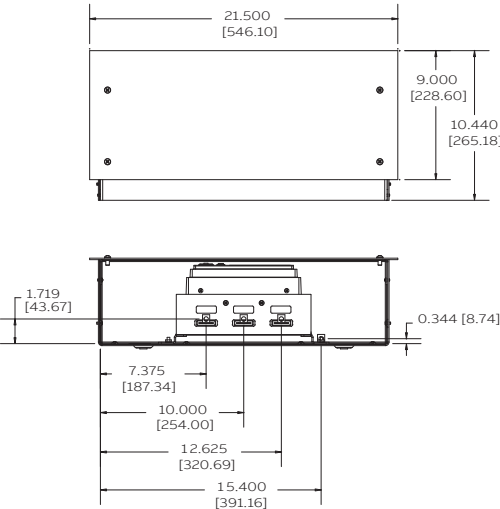
#### TPME and TPHE series integrated SPDs



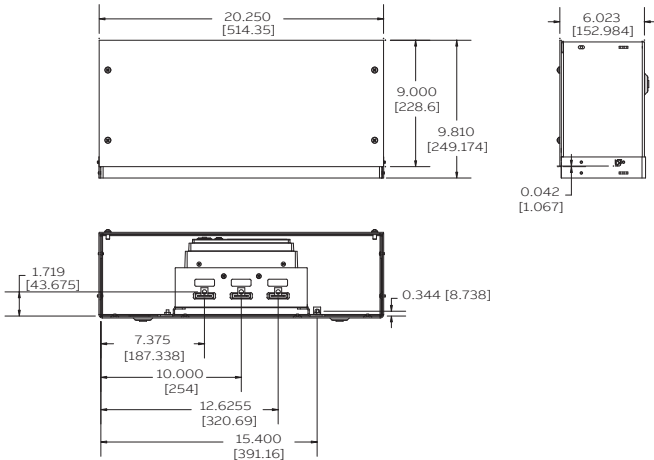
Legacy GE product

Dimensions

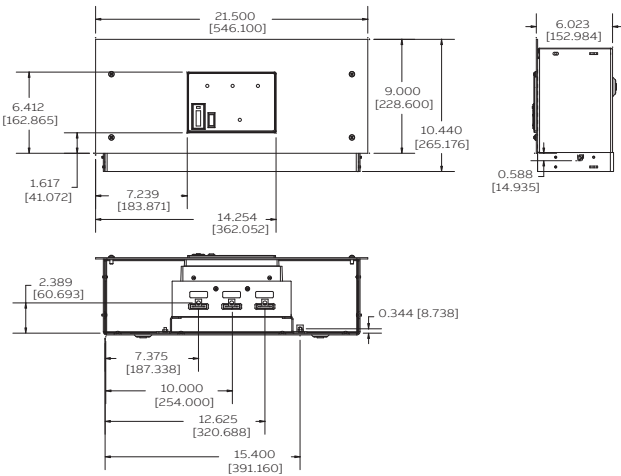
9" box extension SPD



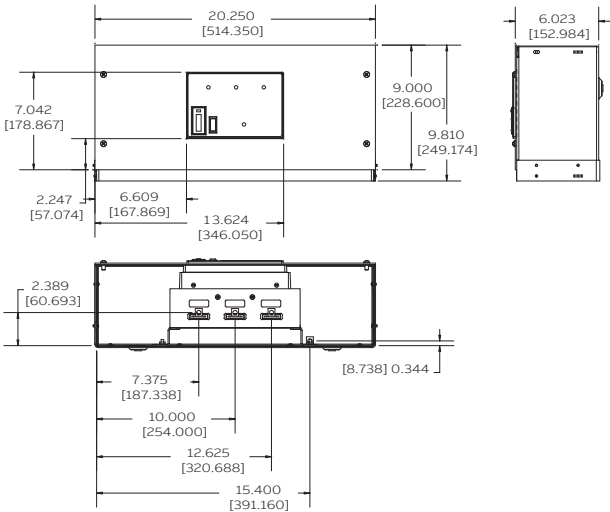
BX9F Dimensions



BX9S Dimensions



BX9WF Dimensions

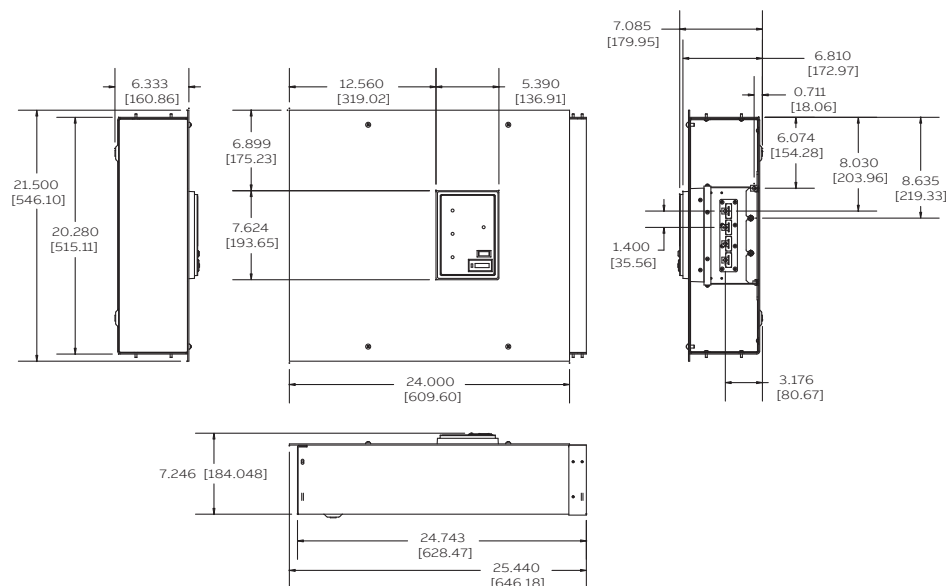


BX9WS Dimensions

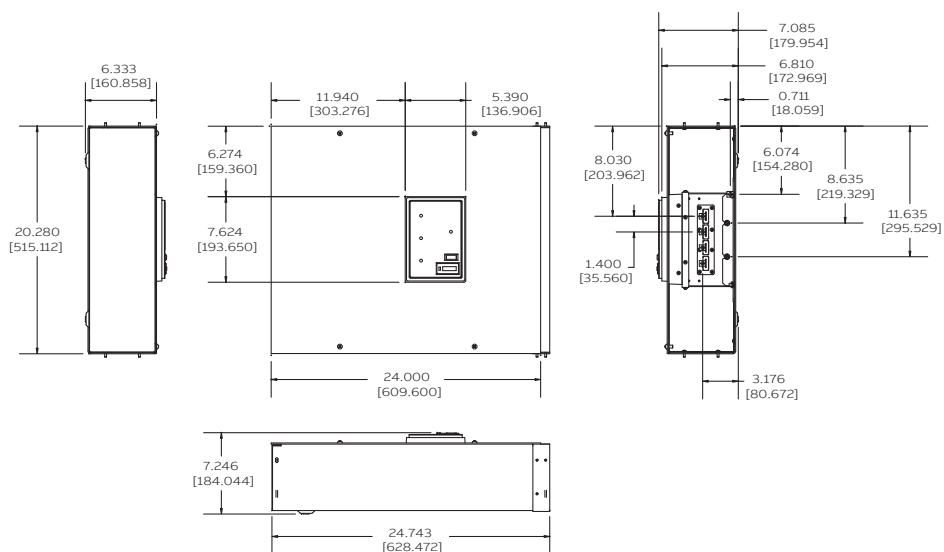
## Legacy GE product

### Dimensions

#### 24" box extension SPD



**BX24WF dimensions**



**BX24WS dimensions**

OVRH series

Product range overview



| Name                | OVRHTP<br>(60, 120, 160, 200, 400)                     | OVRHMSU           | OVRHT3D         | OVRHS3U           | OVRHR           |
|---------------------|--|-------------------|-----------------|-------------------|-----------------|
| Connection ampacity | 4000 and below   | 24 A              | 400 A and below | 400 A and below   | 100 A and below |
| SPD type            | Type 1 and Type 2                                      | Type 4 for Type 2 | Type 1          | Type 1 and Type 2 | Type 1          |
| Certifications      | UL 1449  | UL 1449           | UL 1449         | UL 1449           | UL 1449         |
| Surge ratings       | 60, 80, 100, 120, 160, 200, 240, 300, 400 kA per phase | 50 kA per phase   | 50 kA per phase | 40 kA per phase   | 36 kA per phase |
| LEDs                | Yes  | Yes               | Yes             | Yes               | Yes             |
| Dry relay contacts  | Standard   | Not available     | Not available   | Optional          | Not available   |
| EMI filter          | Optional   | Yes               | Not available   | Not available     | Not available   |
| Surge counter       | Optional   | Not available     | Not available   | Not available     | Not available   |
| Warranty            | 10 years   | 5 years           | 3 years         | 1 year            | 1 year          |

## OVRHTP series

OVRHTP (4,000A and below, 60 to 100kA)



### Product features

- UL Listed 1449 4th edition for Type 1 and Type 2
- SPD applications
- Thermally protected MOVs provide superior protection and continuous operation
- 200 kAIC short circuit current rating allows direct bus connection without the need for an upstream over-current protection device
- UL 1283 EMI/RF filter available as an option
- Compact and lightweight design
- 10-year standard warranty



Product #

**O V R H T P**



| kA rating                        | Suffix |
|----------------------------------|--------|
| 60 kA per phase, 30 kA per mode  | 060    |
| 80 kA per phase, 40 kA per mode  | 080    |
| 100 kA per phase, 50 kA per mode | 100    |

| Voltage and configuration (must choose one)    | Suffix |
|--|--------|
| 120 V, 1-phase, 2-wire + ground                | 1201P  |
| 127 V, 1-phase, 2-wire + ground                | 1271P  |
| 220 V, 1-phase, 2-wire + ground                | 2201P  |
| 230 V, 1-phase, 2-wire + ground                | 2301P  |
| 240 V, 1-phase, 2-wire + ground                | 2401P  |
| 277 V, 1-phase, 2-wire + ground                | 2771P  |
| 240/120 V, 2-phase, 3-wire + ground            | 1202S  |
| 480/240 V, 2-phase, 3-wire + ground            | 2402S  |
| 240Δ /120 V, 3-phase high-leg, 4-wire + ground | 1203H  |
| 208Y/120 V, 3-phase Wye, 4-wire + ground       | 1203Y  |
| 380Y/220 V, 3-phase Wye, 4-wire + ground       | 2203Y  |
| 400Y/230 V, 3-phase Wye, 4-wire + ground       | 2303Y  |
| 415Y/240 V, 3-phase Wye, 4-wire + ground       | 2403Y  |
| 480Y/277 V, 3-phase Wye, 4-wire + ground       | 2773Y  |
| 600Y/347 V, 3-phase Wye, 4-wire + ground       | 3473Y  |
| 208 V, 3-phase Delta, 3-wire + ground          | 2083D  |
| 240 V, 3-phase Delta, 3-wire + ground          | 2403D  |
| 415 V, 3-phase Delta, 3-wire + ground          | 4153D  |
| 480 V, 3-phase Delta, 3-wire + ground          | 4803D  |
| 600 V, 3-phase Delta, 3-wire + ground          | 6003D  |

| Enclosure option                         | Suffix |
|--|--------|
| Fiberglass-reinforced polyester, NEMA 4X | P      |
| Powder-coated metal NEMA 4               | M      |
| Stainless steel NEMA 4X                  | S      |

| Monitoring option (must choose one)   | Suffix |
|---|--------|
| Status indicator LED lights (one per phase)   | B      |
| Status indicator LED lights (one per phase), dry relay contacts, audible alarm with silence button, fault light | U      |

| Filter option                         | Suffix |
|---------------------------------------|--------|
| 4 UF filter                           | 4      |
| UL 1283 filter making device a Type 2 | 4T2    |
| No filter                             | 0      |

OVRHTP series

Product specifications

|  |   |
|--|---|
| Electrical                             |   |
| Maximum surge current rating           | XX kA per phase, XX kA per mode   |
| Nominal discharge current rating (L-N) | 10 kA   |
| Operating frequency                    | 47–63 Hz  |
| Connection method                      | Pre-wired with 36 inches of #10 AWG conductor   |
| Modes of protection                    | All modes (L-N, L-G, N-G, L-L)  |
| Fault rating (SCCR)                    | 200 kAIC — no upstream over-current protection device (breaker or fuse) required                        |
| Application                            | ANSI/IEEE C62.41.1 locations A, B and C ideal for distribution panels, branch panels and critical loads |

|                       |   |
|-----------------------|---|
| Mechanical            |   |
| Installation location | Indoor or outdoor   |
| Mounting method       | Dual mounting flanges   |
| Operating environment | -40 °F to 149 °F (-40 °C to +65 °C)5%–95% non-condensing humidity |
| Altitude              | 0–12,000 ft (3.66 km)   |
| Product design        | Individual thermally fused MOV technology                         |

|                            |                                    |
|----------------------------|------------------------------------|
| EMI/RFI filter attenuation |                                    |
| Mil Standard 220B          | Up to 40 dB from 10 kHz to 100 MHz |

|                            |                      |
|----------------------------|----------------------|
| Regulatory                 |                      |
| cULus 1449 4th Edition     | VZCA: E316636 Type 1 |
| UL 1283 with filter option | Yes                  |
| UL96A compliant            | Yes                  |
| IEEE C62.41.2, C62.45      | Yes                  |
| NFPA 70 (NEC), Article 285 | Yes                  |
| RoHs compliant             | Yes                  |
| Listed by                  | UL                   |

|          |          |
|----------|----------|
| Warranty | 10 years |
|----------|----------|



OVRHTP (4,000A and below, 120 to 200kA)



- UL Listed 1449 4th edition for Type 1 and Type 2
- SPD applications
- Thermally protected MOVs provide superior protection and continuous operation
- 200 kAIC short circuit current rating allows direct bus connection without the need for an upstream over-current protection device
- UL 1283 EMI/RF filter available as an option
- Compact and lightweight design
- 10-year standard warranty



**Product #** O V R H T P

| kA rating                         | Suffix |
|-----------------------------------|--------|
| 120 kA per phase, 60 kA per mode  | 120    |
| 160 kA per phase, 80 kA per mode  | 160    |
| 200 kA per phase, 100 kA per mode | 200    |

| <b>Voltage and configuration (must choose one)</b> | <b>Suffix</b> |
|--|---------------|
| 120 V, 1-phase, 2-wire + ground                    | 1201P         |
| 127 V, 1-phase, 2-wire + ground                    | 1271P         |
| 220 V, 1-phase, 2-wire + ground                    | 2201P         |
| 230 V, 1-phase, 2-wire + ground                    | 2301P         |
| 240 V, 1-phase, 2-wire + ground                    | 2401P         |
| 277 V, 1-phase, 2-wire + ground                    | 2771P         |
| 240/120 V, 2-phase, 3-wire + ground                | 1202S         |
| 480/240 V, 2-phase, 3-wire + ground                | 2402S         |
| 240Δ /120 V, 3-phase high-leg , 4-wire + ground    | 1203H         |
| 208Y/120 V, 3-phase Wye, 4-wire + ground           | 1203Y         |
| 380Y/220 V, 3-phase Wye, 4-wire + ground           | 2203Y         |
| 400Y/230 V, 3-phase Wye, 4-wire + ground           | 2303Y         |
| 415Y/240 V, 3-phase Wye, 4-wire + ground           | 2403Y         |
| 480Y/277 V, 3-phase Wye, 4-wire + ground           | 2773Y         |
| 600Y/347 V, 3-phase Wye, 4-wire + ground           | 3473Y         |
| 208 V, 3-phase Delta, 3-wire + ground              | 2083D         |
| 240 V, 3-phase Delta, 3-wire + ground              | 2403D         |
| 415 V, 3-phase Delta, 3-wire + ground              | 4153D         |
| 480 V, 3-phase Delta, 3-wire + ground              | 4803D         |
| 600 V, 3-phase Delta, 3-wire + ground              | 6003D         |

| Enclosure option                                      | Suffix |
|---|--------|
| Fiberglass-reinforced polyester, NEMA 4X              | P      |
| Powder-coated metal NEMA 4                            | M      |
| Stainless steel NEMA 4X                               | S      |
| Fiberglass-reinforced polyester with termination lugs | PL     |
| Powder-coated metal NEMA 4 with termination lugs      | ML     |
| Stainless steel NEMA 4X with termination lug          | SL     |

| Monitoring option (must choose one)  | Suffix |
|--|--------|
| Status indicator LED lights (one per phase)  | B      |
| Status indicator LED lights (one per phase), dry relay contacts, audible alarm with silence button, fault light                | U      |
| Status indicator LED lights (one per phase), surge counter, dry relay contacts, audible alarm with silence button, fault light | UE     |

| Filter option                         | Suffix |
|---------------------------------------|--------|
| 4 UF filter                           | 4      |
| UL 1283 filter making device a Type 2 | 4T2    |
| No filter                             | 0      |

OVRHTP series

Product specifications

|  |  |
|--|--|
| Electrical                             |  |
| Maximum surge current rating           | XX kA per phase, XX kA per mode  |
| Nominal discharge current rating (L-N) | 20 kA  |
| Operating frequency                    | 47–63 Hz   |
| Connection method                      | Pre-wired with 36 inches of #6 AWG conductor (P, M or S enclosure suffix) or termination lugs for #10–#4 AWG conductor (PL, ML or SL enclosure suffix) |
| Modes of protection                    | All modes (L-N, L-G, N-G, L-L)   |
| Fault rating (SCCR)                    | 200 kAIC — no upstream over-current protection device (breaker or fuse) required   |
| Application                            | ANSI/IEEE C62.41.1 locations A, B and C ideal for distribution panels, branch panels and critical loads  |

|                       |   |
|-----------------------|---|
| Mechanical            |   |
| Installation location | Indoor or outdoor   |
| Mounting method       | Dual mounting flanges   |
| Operating environment | -40 °F to 149 °F (-40 °C to +65 °C)5%–95% non-condensing humidity |
| Altitude              | 0–12,000 ft (3.66 km)   |
| Product design        | Individual thermally fused MOV technology                         |

|                            |                                    |
|----------------------------|------------------------------------|
| EMI/RFI filter attenuation |                                    |
| Mil Standard 220B          | Up to 40 dB from 10 kHz to 100 MHz |

|                            |                      |
|----------------------------|----------------------|
| Regulatory                 |                      |
| cULus 1449 4th Edition     | VZCA: E316636 Type 1 |
| UL 1283 with filter option | Yes                  |
| UL96A compliant            | Yes                  |
| IEEE C62.41.2, C62.45      | Yes                  |
| NFPA 70 (NEC), Article 285 | Yes                  |
| RoHs compliant             | Yes                  |
| Listed by                  | UL                   |

|          |          |
|----------|----------|
| Warranty | 10 years |
|----------|----------|

OVRHTP (4,000A and below, 240 to 400kA)



- UL Listed 1449 4th edition for Type 1 and Type 2
- SPD applications
- Thermally protected MOVs provide superior protection and continuous operation
- 200 kAIC short circuit current rating allows direct bus connection without the need for an upstream over-current protection device
- UL 1283 EMI/RF filter available as an option
- Compact and lightweight design
- 10-year standard warranty



**Product #** O V R H T P

| kA rating                         | Suffix |
|-----------------------------------|--------|
| 240 kA per phase, 120 kA per mode | 240    |
| 300 kA per phase, 150 kA per mode | 300    |
| 400 kA per phase, 200 kA per mode | 400    |

| <b>Voltage and configuration (must choose one)</b> | <b>Suffix</b> |
|--|---------------|
| 120 V, 1-phase, 2-wire + ground                    | 1201P         |
| 127 V, 1-phase, 2-wire + ground                    | 1271P         |
| 220 V, 1-phase, 2-wire + ground                    | 2201P         |
| 230 V, 1-phase, 2-wire + ground                    | 2301P         |
| 240 V, 1-phase, 2-wire + ground                    | 2401P         |
| 277 V, 1-phase, 2-wire + ground                    | 2771P         |
| 240/120 V, 2-phase, 3-wire + ground                | 1202S         |
| 480/240 V, 2-phase, 3-wire + ground                | 2402S         |
| 240Δ/120 V, 3-phase high-leg, 4-wire + ground      | 1203H         |
| 208Y/120 V, 3-phase Wye, 4-wire + ground           | 1203Y         |
| 380Y/220 V, 3-phase Wye, 4-wire + ground           | 2203Y         |
| 400Y/230 V, 3-phase Wye, 4-wire + ground           | 2303Y         |
| 415Y/240 V, 3-phase Wye, 4-wire + ground           | 2403Y         |
| 480Y/277 V, 3-phase Wye, 4-wire + ground           | 2773Y         |
| 600Y/347 V, 3-phase Wye, 4-wire + ground           | 3473Y         |
| 208 V, 3-phase Delta, 3-wire + ground              | 2083D         |
| 240 V, 3-phase Delta, 3-wire + ground              | 2403D         |
| 415 V, 3-phase Delta, 3-wire + ground              | 4153D         |
| 480 V, 3-phase Delta, 3-wire + ground              | 4803D         |
| 600 V, 3-phase Delta, 3-wire + ground              | 6003D         |

| Enclosure option                                      | Suffix |
|---|--------|
| Fiberglass-reinforced polyester with termination lugs | PL     |
| Powder-coated metal NEMA 4 with termination lugs      | ML     |
| Stainless steel NEMA 4X with termination lug          | SL     |

| Monitoring option (must choose one)  | Suffix |
|--|--------|
| Status indicator LED lights (one per phase)  | B      |
| Status indicator LED lights (one per phase), dry relay contacts, audible alarm with silence button, fault light                | U      |
| Status indicator LED lights (one per phase), surge counter, dry relay contacts, audible alarm with silence button, fault light | UE     |

| Filter option                         | Suffix |
|---------------------------------------|--------|
| 4 UF filter                           | 4      |
| UL 1283 filter making device a Type 2 | T2     |
| No filter                             | 0      |

OVRHTP series

Product specifications

|  |   |
|--|---|
| Electrical                             |   |
| Maximum surge current rating           | XX kA per phase, XX kA per mode   |
| Nominal discharge current rating (L-N) | 20 kA   |
| Operating frequency                    | 47–63 Hz  |
| Connection method                      | Termination lugs for #10–#4 AWG conductor (PL, ML or SL enclosure suffix)                               |
| Modes of protection                    | All modes (L-N, L-G, N-G, L-L)  |
| Fault rating (SCCR)                    | 200 kAIC — no upstream over-current protection device (breaker or fuse) required                        |
| Application                            | ANSI/IEEE C62.41.1 locations A, B and C ideal for distribution panels, branch panels and critical loads |

|                       |   |
|-----------------------|---|
| Mechanical            |   |
| Installation location | Indoor or outdoor   |
| Mounting method       | Dual mounting flanges   |
| Operating environment | -40 °F to 149 °F (-40 °C to +65 °C)5%–95% non-condensing humidity |
| Altitude              | 0–12,000 ft (3.66 km)   |
| Product design        | Individual thermally fused MOV technology                         |

|                            |                                    |
|----------------------------|------------------------------------|
| EMI/RFI filter attenuation |                                    |
| Mil Standard 220B          | Up to 40 dB from 10 kHz to 100 MHz |

|                            |                      |
|----------------------------|----------------------|
| Regulatory                 |                      |
| cULus 1449 4th Edition     | VZCA: E316636 Type 1 |
| UL 1283 with filter option | Yes                  |
| UL96A compliant            | Yes                  |
| IEEE C62.41.2, C62.45      | Yes                  |
| NFPA 70 (NEC), Article 285 | Yes                  |
| RoHs compliant             | Yes                  |
| Listed by                  | UL                   |

|          |          |
|----------|----------|
| Warranty | 10 years |
|----------|----------|

## OVRH series

OVRHT3D (400 A and below, 50 kA)



### Product features

- UL listed 1449 5th edition for Type 1 SPD applications
- 50 kA per phase protection
- Individual thermally fused and protected MOVs
- Includes pre-wired pigtail conductors
- Multiple MOVs per phase eliminate single-point failure

| Voltage              | Network Type 1 SPD                | Part number    |
|----------------------|-----------------------------------|----------------|
| 240 V                | 1-phase, 2-wire + ground          | OVRHT3D502401P |
| 277 V                | 1-phase, 2-wire + ground          | OVRHT3D502771P |
| 240/120 V            | 2-phase, 3-wire + ground          | OVRHT3D501202S |
| 208/120 V            | 3-phase Wye, 4-wire + ground      | OVRHT3D501203Y |
| 380/220 V            | 3-phase Wye, 4-wire + ground      | OVRHT3D502203Y |
| 480/277 V            | 3-phase Wye, 4-wire + ground      | OVRHT3D502773Y |
| 240 V                | 3-phase Delta, 3-wire + ground    | OVRHT3D502403D |
| 380 V                | 3-phase Delta, 3-wire + ground    | OVRHT3D503803D |
| 480 V                | 3-phase Delta, 3-wire + ground    | OVRHT3D504803D |
| <b>Special order</b> |                                   |                |
| 120 V                | 1-phase, 2-wire + ground          | OVRHT3D501201P |
| 220 V                | 1-phase, 2-wire + ground          | OVRHT3D502201P |
| 230 V                | 1-phase, 2-wire + ground          | OVRHT3D502301P |
| 347 V                | 1-phase, 2-wire + ground          | OVRHT3D503471P |
| 480/240 V            | 2-phase, 3-wire + ground          | OVRHT3D502402S |
| 400/230 V            | 3-phase Wye, 4-wire + ground      | OVRHT3D502303Y |
| 415/240 V            | 3-phase Wye, 4-wire + ground      | OVRHT3D502403Y |
| 600/347 V            | 3-phase Wye, 4-wire + ground      | OVRHT3D503473Y |
| 400 V                | 3-phase Delta, 3-wire + ground    | OVRHT3D504003D |
| 600 V                | 3-phase Delta, 3-wire + ground    | OVRHT3D506003D |
| 240/120 V            | 3-phase high-leg, 4-wire + ground | OVRHT3D502403H |

| <b>Electrical</b>  |  |
|--|--|
| Maximum surge current                                    | 50 kA per phase  |
| UL type designation                                      | Type 1   |
| UL 1449 nominal discharge current rating (I-n)           | 20 kA  |
| UL 1449 fault rating/short circuit current rating (SCCR) | 200 kAIC   |
| <b>Design specifications</b>                             |  |
| Product design   | Individual thermally fused and protected MOVs                    |
| Connection methods                                       | External parallel connected for mounting next to electrical gear |
| Typical connection                                       | 18" #12 AWG (pre-wired pig tails)                                |
| <b>Diagnostic and status monitoring specifications</b>   |  |
| LED protection status monitoring standard                | Status indicator light, 1 per phase                              |
| <b>Enclosure</b>   |  |
| Enclosure type   | Polycarbonate, NEMA 4X   |
| Installation location                                    | Indoor/outdoor   |
| Mounting method  | 12.7 mm (½") NPT side-mount nipple                               |
| <b>Technical data</b>                                    |  |
| Humidity range   | 0–95% non-condensing   |
| Operating environment                                    | -35 °C to +85 °C (-31 °F to +185 °F)                             |
| Operating frequency                                      | 50–60 Hz   |
| Modes of protection                                      | Model dependent  |

| <b>Size specifications</b> |                       |
|----------------------------|-----------------------|
| Dimensions                 | 4.25" × 2.41" × 2.75" |
| Weight                     | 0.23 kg (0.5 lb.)     |

### Standards compliance and certifications

UL 1449 5th Edition: 2021, cULus, (UL File: VZCA E316636), ANSI/IEEE C62.41.1-2002, C62.41.2-2002, C62.420-2002, NEC Article 285  
 ISO 9001: 2014 quality management system, ISO 17025:2007 laboratory certification (UL DAP program) compliance with RoHS, REACH and California Prop 65  
 100% quality tested prior to shipping

## OVRH series

OVRHS3U (400A and below, 40kA)



### Product features

- Listed to UL 1449 4th Edition for Type 1 or Type 2 SPD applications
- Individual fusing for each Metal Oxide Varistors (MOVs)
- LED indicating proper functioning of L-N and N-G MOVs
- Pre-wired with 18in (450mm) cables #14AWG (2mm<sup>2</sup>)
- 1-year standard warranty



| Voltage     | Network Type 1 SPD    | Part number    |
|-------------|-----------------------|----------------|
| 120 Vac     | 1PH, 2W + GND         | OVRHS3U401201P |
| 240/120 Vac | 2PH, 3W + GND         | OVRHS3U401202S |
| 240V        | 3PH, 4W + GND (Delta) | OVRHS3U402403D |
| 208/120 Vac | 3PH, 4W + GND (Wye)   | OVRHS3U401203Y |

| Voltage  | Network Type 2 SPD         | Part number     |
|----------|----------------------------|-----------------|
| 240V     | 1PH, 2W + GND              | OVRHS3U402401P  |
| 240/120V | 2PH, 3W + GND <sup>1</sup> | OVRHS3U801202SR |
| 480V     | 3PH, 3W + GND (Delta)      | OVRHS3U404803D  |
| 240/120V | 3PH, 4W + GND (Hi-Leg)     | OVRHS3U401203H  |
| 480/277V | 3PH, 4W + GND (Wye)        | OVRHS3U402773Y  |
| 400/230V | 3PH, 3W + GND (Wye)        | OVRHS3U402303Y  |

<sup>1</sup>80kA unit including 1283 listed filter, dry contacts option not available

| Available Options                     | Suffix |
|---------------------------------------|--------|
| Dry relay contacts                    | 5      |
| Dry relay contacts + mounting bracket | P      |

| Electrical characteristics             |                                |
|--|--------------------------------|
| Nominal discharge current rating (I-n) | 20kA                           |
| Operating frequency                    | 47-63Hz                        |
| Connection method                      | Parallel to load               |
| Modes of protection                    | All modes (L-N, L-G, N-G, L-L) |
| Fault rating (SCCR)                    | 100kAIC                        |
| Response time                          | Less than 1 nanosecond         |
| Standard monitoring                    | LED status indicator lights    |

| Mechanical characteristics |                                  |
|----------------------------|----------------------------------|
| Weight                     | 2 lbs. (0.9 kg)                  |
| Enclosure type             | NEMA 1 non-metallic              |
| Installation location      | Indoor                           |
| Mounting method            | 1/2in (12.7mm) - 14 NPT thread   |
| Operating temperature      | -40° to +176° F (-40° to +80° C) |
| Altitude                   | Up to 16,400 ft. (5000 m)        |
| Product design             | Individually fused MOVs          |

| Regulations & certifications |                                 |
|------------------------------|---------------------------------|
| UL 1449 4th edition          | Type 1 and Type 2               |
| UL 1283                      | Only for <b>OVRHS3U802402SR</b> |
| IEEE C62.41.1, .2, C62.45    | Yes                             |
| Listed by                    | UL                              |

## OVRHR

OVRHR (100A and below, 36kA)



### Product features

- 36 kA per phase
- UL 1449 Listed
- 10 kA I-nominal rating
- 200 kA SCCR
- Catalog number: OVRHR361202S

### General specifications

|                                      |                 |
|--------------------------------------|-----------------|
| Maximum surge current                | 36 kA per phase |
| UL type designation                  | Type 1          |
| UL 1449 I-nominal rating             | 10 kA           |
| UL 1449 Short circuit current rating | 65 kA           |

### Design specifications

Custom MOV design for high energy handling in category c locations

Thermally protected MOVs

External parallel connected for mounting next to electrical gear

Reduced mode of protection (L1-N, L2-N)

### Diagnostic and status monitoring specifications

LED protection status monitoring (single LED standard)

### Standards compliance and certifications

UL 1449 5th Edition: 2021, cULus, (UL File: VZCA.E316468), ANSI/IEEE C62.41.1-2002, C62.41.2-2002, C62.420-2002, NEC Article 285

ISO 9001: 2014 quality management system, ISO 17025:2007 laboratory certification (UL DAP program) compliance with RoHS, REACH and California Prop 65

100% quality tested prior to shipping

### Size and mechanical specifications

|                   |                               |
|-------------------|-------------------------------|
| Dimensions        | 4.25" × 2.41" × 2.75"         |
| Weight            | 0.46 lbs                      |
| Enclosure type    | Polycarbonate NEMA 4X         |
| Installation type | Indoor / outdoor              |
| Mounting method   | Flush / flange / through-hole |

### Enclosure

Polycarbonate 4.25" × 2.41" × 2.75"

Lid ultrasonically sealed

NEMA 4X

1/2 inch NPT side-mount nipple

### Filtering

NO

### Technical data

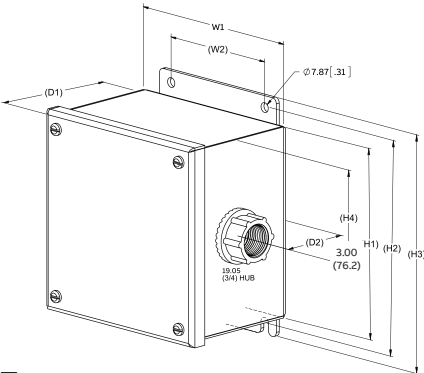
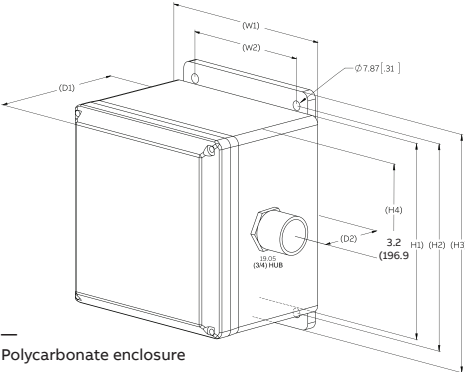
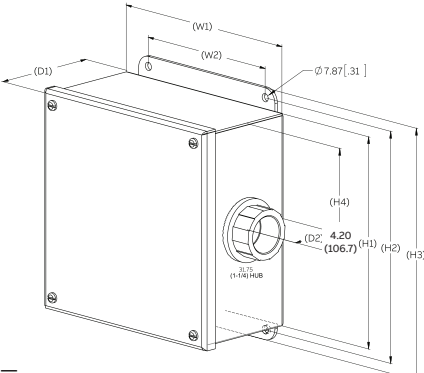
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|-----------------------|-----------------------------------|
| Humidity range        | 0 – 95% non-condensing            |
| Operating frequency   | 50 – 60 Hz                        |
| Operating temperature | -35°C to +85°C                    |
| Typical connection    | 18" #12 AWG (pre-wired pig tails) |

### UL 1449 performance data

| System voltage    | L-N | L-G | N-G | L-L  | SCCR   | MCOV |
|-------------------|-----|-----|-----|------|--------|------|
| 240/120 V split Ø | 700 | –   | –   | 1200 | 200 kA | 180  |

OVRHTP series

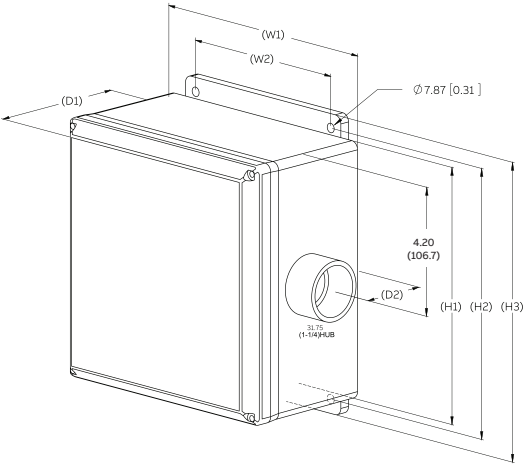
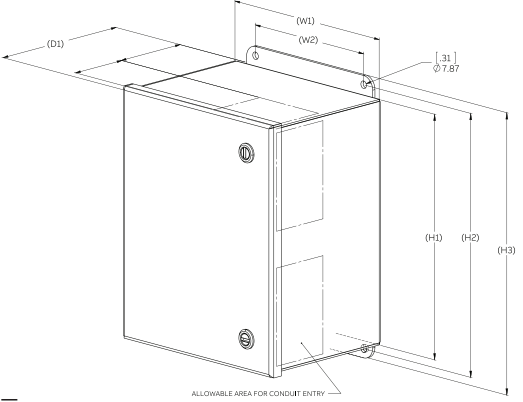
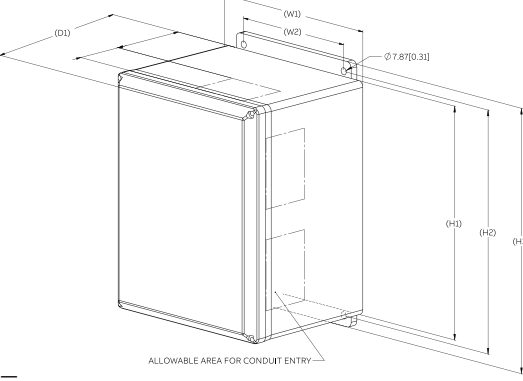
Dimensions

| Dimensions OVRHTP (60 to 100 kA)   |       |                      |
|--|-------|----------------------|
|  <p>Metal enclosure</p>                                | Value | Inches / Millimeters |
|  | H1    | 6.00 / 152.4         |
|  | H2    | 6.75 / 171.5         |
|  | H3    | 7.5 / 190.5          |
|  | W1    | 6.00 / 152.4         |
|  | W2    | 4.00 / 101.6         |
|  | D1    | 4.26 / 108.3         |
|  | D2    | 2.25 / 57.2          |
|  <p>Polycarbonate enclosure</p>                       | H1    | 6.42 / 163           |
|  | H2    | 6.75 / 171.5         |
|  | H3    | 7.75 / 196.9         |
|  | W1    | 6.42 / 163           |
|  | W2    | 4.50 / 114.3         |
|  | D1    | 4.79 / 121.7         |
|  | D2    | 2.25 / 57.15         |
| Dimensions OVRHTP (120 to 200 kA)  |       |                      |
|  <p>Metal enclosure pre-wired Enclosure option M</p> | Value | Inches / Millimeters |
|  | H1    | 8.00 / 203.2         |
|  | H2    | 8.75 / 222.3         |
|  | H3    | 9.5 / 241.3          |
|  | W1    | 8.00 / 203.2         |
|  | W2    | 6.00 / 152.4         |
|  | D1    | 4.26 / 108.3         |
|  | D2    | 2.00 / 50.8          |



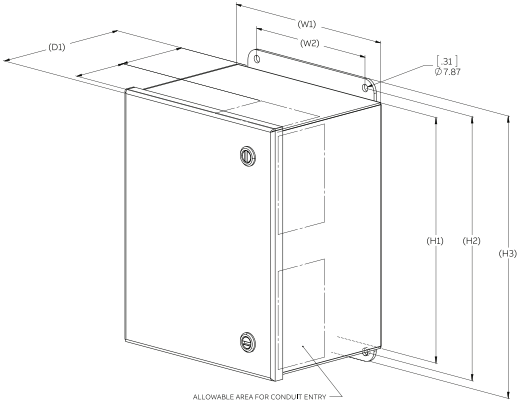
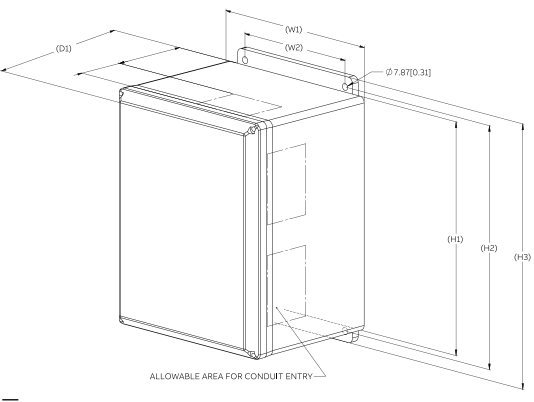
OVRHTP series

Dimensions

| Dimensions OVRHTP (120 to 200 kA)  |       |                      |
|--|-------|----------------------|
|  | Value | Inches / Millimeters |
|  <p>Polycarbonate enclosure pre-wired Enclosure option P</p>    | H1    | 8.42 / 213.9         |
|  | H2    | 8.84 / 224.4         |
|  | H3    | 9.78 / 248.3         |
|  | W1    | 8.42 / 213.9         |
|  | W2    | 6.00 / 152.4         |
|  | D1    | 4.79 / 121.7         |
|  <p>Metal enclosure with lugs Enclosure option ML</p>         | D2    | 2.25 / 57.2          |
|  | H1    | 10.00 / 254          |
|  | H2    | 10.75 / 273.1        |
|  | H3    | 11.5 / 292.1         |
|  | W1    | 8.00 / 203.2         |
|  | W2    | 6.00 / 152.4         |
|  <p>Polycarbonate enclosure with lugs Enclosure option PL</p> | D     | 6.26 / 159.1         |
|  | H1    | 10.35 / 291.9        |
|  | H2    | 10.75 / 273.1        |
|  | H3    | 11.69 / 296.9        |
|  | W1    | 8.35 / 212.1         |
|  | W2    | 6.00 / 152.4         |
|  | D     | 6.79 / 172.5         |

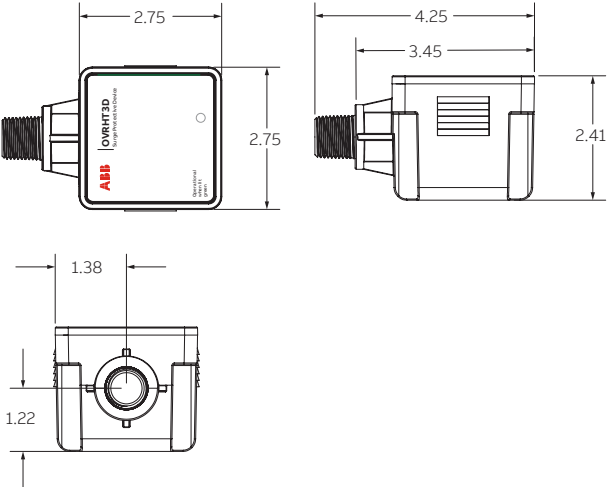
OVRHTP series

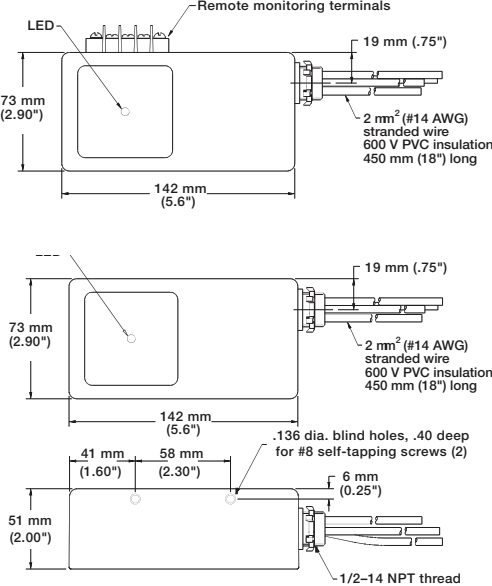
Dimensions

| Dimensions OVRHTP (240 to 400 kA)   |    |               |
|---|----|---------------|
|  <p>—</p> <p>Metal enclosure with lugs Enclosure option ML</p>          | H1 | 10.00 / 254   |
|   | H2 | 10.75 / 273.1 |
|   | H3 | 11.5 / 292.1  |
|   | W1 | 8.00 / 203.2  |
|   | W2 | 6.00 / 152.4  |
|   | D  | 6.26 / 159.1  |
|  <p>—</p> <p>Polycarbonate enclosure with lugs Enclosure option PL</p> | H1 | 10.35 / 291.9 |
|   | H2 | 10.75 / 273.1 |
|   | H3 | 11.69 / 296.9 |
|   | W1 | 8.35 / 212.1  |
|   | W2 | 6.00 / 152.4  |
|   | D  | 6.79 / 172.5  |

OVRH series

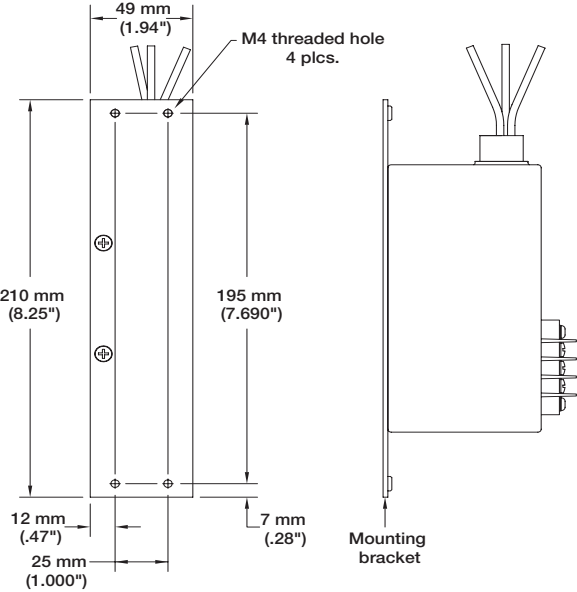
Dimensions

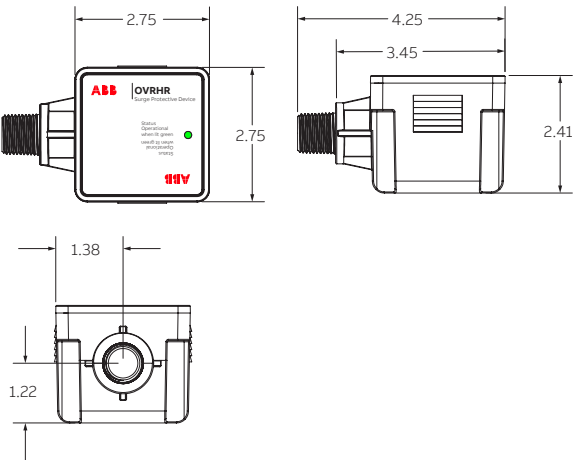
| Dimensions OVRHT3D  |   |       |                      |
|---|---|-------|----------------------|
|   |   | Value | Inches / millimeters |
|  | W |       | 4.25/ 107.95         |
|   | D |       | 2.41/61.214          |
|   | H |       | 2.75/69.85           |

| Dimensions OVRHS3U (with and without dry contacts option)                           |   |       |                      |
|---|---|-------|----------------------|
|   |   | Value | Inches / Millimeters |
|  | W |       | 2.90 / 73.0          |
|   | D |       | 2.00 / 51.0          |
|   | H |       | 5.60 / 142.0         |

OVRH series

Dimensions

| Dimensions mounting bracket OVRHS3U  |       |                      |
|--|-------|----------------------|
|  | Value | Inches / Millimeters |
|  | W     | 1.94 / 49.0          |
|  | H     | 8.25 / 210.0         |

| Dimensions OVRHR   |       |                      |
|--|-------|----------------------|
|  | Value | Inches / millimeters |
|  | W     | 4.25/ 107.95         |
|  | D     | 2.41/61.214          |
|  | H     | 2.75/69.85           |

OVRHMSU series

Series-connected suppression filter system



Product features

The OVRHMSU is engineered for hard-wired installation within or adjacent to electrical loads such as outdoor lighting, robotics, process automation systems, motors, HVAC systems, pumps, heaters, programmable logic controllers and other point-of-use applications. Compact and powerful, the OVRHMSU protects these and other individual components from damaging electrical transients, high-frequency noise and high-energy disturbances. OVRHMSU provides 50kA of surge protection for loads up to 24 amps.



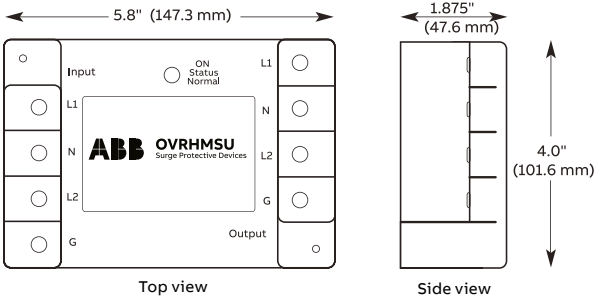
Product # M S U - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

| kA/mode     | Voltage* |          |
|-------------|----------|----------|
| 50 kA = 050 | 208      | 120/240  |
|             | 240      | 208Y/120 |
|             | 380      | 380Y/220 |
|             | 480      | 480Y/277 |

| Configuration*                    | Load Current | Modes of Protection |
|-----------------------------------|--------------|---------------------|
| 1G 1 Phase, Grounded              | 24 Amp       | 3 or 6              |
| 2G 2 Phase, Grounded, Split Phase |              |                     |

\*Consult factory for additional voltage configurations

| Input Voltages | Phase       | Load Current Ratings (A) | Line Frequency Range (Hz) |
|----------------|-------------|--------------------------|---------------------------|
| 120V           | 1           | 24                       | 50–60                     |
| 120/240V       | Split-Phase | 24                       | 50–60                     |
| 220V           | 1           | 24                       | 50–60                     |
| 220/380V       | 2           | 24                       | 50–60                     |
| 277V           | 1           | 24                       | 50–60                     |
| 277/480V       | 2           | 24                       | 50–60                     |



OVRHMSU series

Series-connected suppression filter system

High-frequency noise filtration

| Model No.                  | Voltage | Mode | 1KHz | 10KHz | 100KHz | 1MHz  | 10MHz | 100MHz |
|----------------------------|---------|------|------|-------|--------|-------|-------|--------|
| MSU50-120-1G-24A-3-ABB     | 120     | L-N  | 6 dB | 16 dB | 42 dB  | 25 dB | 21 dB | 36 dB  |
| MSU50-120/240-2G-24A-6-ABB | 120/240 | L-G  | 6 dB | 6 dB  | 16 dB  | 55 dB | 81 dB | 80 dB  |
| MSU50-220-1G-24A-3-ABB     | 220     | L-N  | 6 dB | 16 dB | 42 dB  | 25 dB | 21 dB | 36 dB  |
| MSU50-220/380-2G-24A-6-ABB | 220/380 | L-G  | 6 dB | 6 dB  | 16 dB  | 55 dB | 81 dB | 80 dB  |
| MSU50-277-1G-24A-3-ABB     | 277     | L-N  | 6 dB | 16 dB | 42 dB  | 25 dB | 21 dB | 36 dB  |
| MSU50-277/480-2G-24A-6-ABB | 277/480 | L-G  | 6 dB | 6 dB  | 8 dB   | 36 dB | 82 dB | 81 dB  |

OVRHMSU performance data

| Model No.                  | System Voltage (VAC) | Current (A) | Phase 1 or 2 | MCOV / UC (V) |     |     |     | VPR / VPL (Up) |      |      |      |          |
|----------------------------|----------------------|-------------|--------------|---------------|-----|-----|-----|----------------|------|------|------|----------|
|                            |                      |             |              | L-N           | L-G | N-G | L-L | L-N            | L-G  | N-G  | L-L  | I-n (kA) |
| MSU50-120-1G-24A-3-ABB     | 120                  | 24A         | 1            | 150           | 300 | 150 | N/A | 800            | 800  | 800  | N/A  | 20       |
| MSU50-120/240-2G-24A-6-ABB | 120/240              | 24A         | 2            | 150           | 300 | 150 | 300 | 800            | N/A  | 800  | 1200 | 20       |
| MSU50-220-1G-24A-3-ABB     | 220                  | 24A         | 1            | 320           | 552 | 320 | N/A | 1200           | 1200 | 1000 | N/A  | 20       |
| MSU50-220/380-2G-24A-6-ABB | 220/380              | 24A         | 2            | 320           | 552 | 320 | 552 | 1200           | N/A  | 1000 | 2000 | 20       |
| MSU50-277-1G-24A-3-ABB     | 277                  | 24A         | 1            | 320           | 552 | 320 | N/A | 1200           | 1200 | 1000 | N/A  | 20       |
| MSU50-277/480-2G-24A-6-ABB | 277/480              | 24A         | 2            | 320           | 552 | 320 | 552 | 1200           | N/A  | 1000 | 2000 | 20       |

Product Specifications

| General Specifications                 |  |
|--|--|
| Maximum Surge Current Rating           | 50kA Per Mode  |
| Voltage (Single-Phase Applications)    | 120, 220 or 277  |
| Voltage (3-Wire + Ground Applications) | 220/380 or 277/480   |
| Voltage (Split-Phase Applications)     | 120/240  |
| Safety Listings                        | Listed by ETL to UL 1449 4th Edition, Type 4 for Type 2 SPD applications, cUL, and UL 1283 / Compliant to IEEE C62.41.1-2002, C62.41.2-2002 and C62.420-2002 / NFPA 70 [NEC], Article 285 / RoHS Compliant / CE, IEC 61643-11-2011 / EMC Directive 2004/108/EC |
| Product Design                         | Individually fused MOVs UL 1283 EMI/RFI filter   |
| Ampacity Rating                        | 24A  |
| Dimensions                             | 5.8"W x 4"H x 1.875"D  |
| Weight                                 | 2.25 lbs.  |
| Enclosure Type                         | Nonmetallic  |
| Operating Environment                  | -40°F to 140°F (-40°C to 60°C) 5% – 95% Non-Condensing Humidity  |
| Connection Method                      | Series/in-line; Terminal Block Termination   |
| Connection Means                       | #8 Screws  |
| Protection Modes                       | 3 or 6   |
| Warranty                               | 5 Years  |

## Protection and safety

### OVRT2 series – Selection guide

#### Complete facility protection

Installing surge protection at the main distribution panel is only the beginning of protecting the entire operation. As most transient surges are created internally, it is necessary to install surge protection at sub-distribution panels (equipment protection) to be fully protected. Stepping down the  $I_{max}$  level from the service entrance panel toward equipment to be protected is recommended.

For example, if a 40 kA  $I_{max}$  SPD is installed in the main distribution panel, then 15 kA  $I_{max}$  SPDs should be installed in sub-distribution panels for equipment protection.

#### Coordination

It may be necessary to add a second surge protector, wired to the incoming unit, to achieve the required voltage protection and/or surge capacity. For Type 2 or 4 SPDs, installing this second unit a minimum of 1 m from the first unit will allow the two to work together, achieving the required protection.

#### Wiring rules

The impedance of the cables increases the voltage across the connected equipment. Therefore, the length of the cable between the surge protector and the equipment should be minimized.

The surge protective device should be installed as close to the equipment to be protected as possible. If this is not possible (the equipment is over 30 m from the panel), then a second surge protector must be installed.

#### Choosing the correct model

##### 1) Determine the service voltage

Consult qualified personnel if the facility or operation service voltage is unknown.

##### 2) Select the SPD maximum continuous operating voltage (MCOV, $U_c$ )

The MCOV should correspond to the service voltage. Example: If the service voltage is 480 V Delta, an SPD with 550 V or 660 V MCOV will be required. Surge protection devices must also provide a level of protection compatible with the withstand voltage of the equipment. This withstand voltage depends on the type of equipment and its sensitivity. The incoming surge protector may not provide adequate protection by itself, as certain electrical phenomena may greatly increase its residual voltage if cable lengths exceed 10 m. A second SPD may be necessary.

##### 3) Select the SPD surge capacity ( $I_{max}$ )

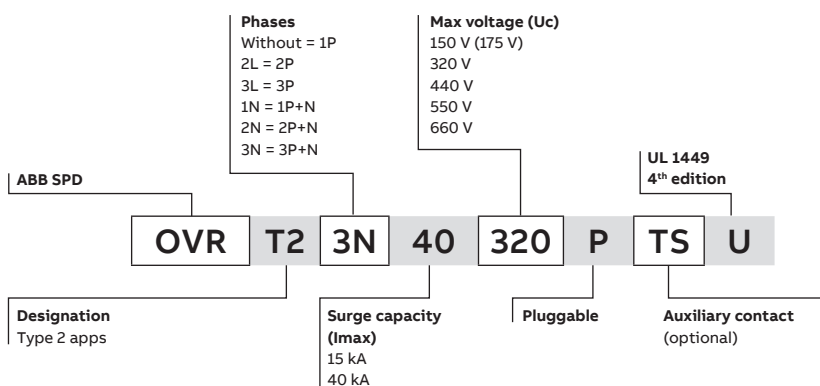
Surge capacity is the amount of energy the SPD can withstand from a single surge event. The higher the surge capacity, the longer the device will protect the system. A second surge protector may be required if the surge capacity of the first is not capable of diverting all surge current to ground. See coordination below.

##### 4) Remote monitoring (optional)

Integrated auxiliary contact for remote monitoring available on models with "TS" designation.

Consult "Selection tables" on next page for help in the selection of SPDs.

#### OVR DIN rail SPD – Product type description



## Product range overview

[illegible]



## OVRT2 series

### OVRT2 single-pole



#### Product features

- Type 4 SPD, UL 1449 4th Edition for Type 2 applications
- Metal oxide varistor (MOV) technology
- Single-pole design
- Replaceable and pluggable cartridges
- DIN rail-mounted SPD
- State indication flag standard on all units
- End-of-life signal standard on 40 kA units



| Network type                                 | Voltage        | MCOV     | VPR    | Max. disch. | Nominal disch. | Part number    | Repl. cartridge |
|--|----------------|----------|--------|-------------|----------------|----------------|-----------------|
| Pole to be connected between L-N, L-G or L-L | 120 V AC       | 150 V AC | 0.6 kV | 15 kA       | 5 kA           | OVRT215150PU   | OVRT215150CU    |
|  |                |          |        | 40 kA       | 20 kA          | OVRT240150PU   | OVRT240150CU    |
|  |                |          |        |             |                | OVRT240150PTSU | OVRT240150CU    |
|  | 240...277 V AC | 320 V AC | 1.0 kV | 15 kA       | 5 kA           | OVRT215320PU   | OVRT215320CU    |
|  |                |          |        | 40 kA       | 20 kA          | OVRT240320PTSU | OVRT240320CU    |
|  | 347 V AC       | 440 V AC | 1.3 kV | 40 kA       | 20 kA          | OVRT240440PTSU | OVRT240440CU    |
| Neutral pole to be connected between N-G     | 480 V AC       | 550 V AC | 1.7 kV | 40 kA       | 20 kA          | OVRT240550PTSU | OVRT240550CU    |
|  | 600 V AC       | 660 V AC | 1.9 kV | 40 kA       | 20 kA          | OVRT240660PTSU | OVRT240660CU    |
|  | 230 V AC       | 255 V AC | 1.2 kV | 70 kA       | 20 kA          | OVRT270NPU     | OVRT270NCU      |

#### Electrical characteristics

|                     |  |
|---------------------|--|
| Operating frequency | (AC) 47–63 Hz  |
| Modes of protection | L-N, L-G, N-G or L-L                                     |
| Fault rating (SCCR) | 200 kAIC – Upstream protection required (breaker / fuse) |
| Response time       | < 25 nanoseconds   |
| Standard monitoring | Cartridge state indicator flag                           |

#### Mechanical characteristics

|                               |                                   |
|-------------------------------|-----------------------------------|
| Weight                        | 0.25 lbs. (120 g)                 |
| Housing material              | Thermoplastic, gray RAL 7035 / V0 |
| Installation location         | Type 1, indoor                    |
| Mounting method               | DIN rail                          |
| Operating temperature         | -40 °to 80 °C (-40 °to 175 °F)    |
| Wire range (stranded / solid) | #6–14 AWG / #4–14 AWG             |
| Product design                | MOV technology                    |

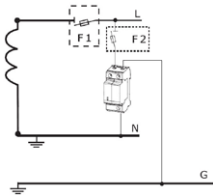
OVRT2 series

OVRT2 1N



- Product features**
- Type 4 SPD, UL 1449 4th Edition for Type 2 applications
  - Metal oxide varistor (MOV) technology
  - 1p+N+Gnd complete design
  - Replaceable and pluggable cartridges
  - DIN rail-mounted SPD
  - State indication flag standard on all units
  - End-of-life signal standard on 40 kA units



| Network type  | Voltage      | MCOV     | VPR    | Max. disch. | Nominal disch. | Part number      | Repl. cartridge |
|---|--------------|----------|--------|-------------|----------------|------------------|-----------------|
|  | 120 V AC     | 175 V AC | 1.2 kV | 15 kA       | 5 kA           | OVRT21N15150PU   | OVRT215150CU    |
|   |              |          |        | 40 kA       | 20 kA          | OVRT21N40150PU   | OVRT240150CU    |
|   |              |          |        |             |                | OVRT21N40150PTSU | OVRT240150CU    |
|   | 240–277 V AC | 320 V AC | 1.2 kV | 15 kA       | 5 kA           | OVRT21N15320PU   | OVRT215320CU    |
|   |              |          |        | 40 kA       | 20 kA          | OVRT21N40320PTSU | OVRT240320CU    |
|   | 347 V AC     | 440 V AC | 1.2 kV | 40 kA       | 10 kA          | OVRT21N40440PTSU | OVRT240440CU    |
|   | 480 V AC     | 550 V AC | 1.2 kV | 40 kA       | 10 kA          | OVRT21N40550PTSU | OVRT240550CU    |
|   | 600 V AC     | 660 V AC | 1.2 kV | 40 kA       | 10 kA          | OVRT21N40660PTSU | OVRT240660CU    |
| Neutral pole  | 230 V AC     | 255 V AC | 1.2 kV | 70 kA       | 20 kA          | -                | OVRT270NCU      |

| Electrical characteristics    |  |
|-------------------------------|--|
| Operating frequency           | 50–60 Hz   |
| Modes of protection           | L-N and N-G  |
| Fault rating (SCCR)           | 200 kAIC – Upstream protection required (breaker / fuse) |
| Response time                 | < 25 nanoseconds   |
| Standard monitoring           | Cartridge state indicator flag                           |
| Mechanical characteristics    |  |
| Weight                        | 0.53 lbs. (240 g)  |
| Housing material              | Thermoplastic, gray RAL 7035 / V0                        |
| Installation location         | Type 1, indoor   |
| Mounting method               | DIN rail   |
| Operating temperature         | -40 °to 80 °C (-40 °to 175 °F)                           |
| Wire range (stranded / solid) | #6–14 AWG / #4–14 AWG                                    |
| Product design                | MOV technology   |

## OVRT2 series

### OVRT2 2L



#### Product features

- Type 4 SPD, UL 1449 4th Edition for Type 2 applications
- Metal oxide varistor (MOV) technology
- 2p+Gnd complete design
- Replaceable and pluggable cartridges
- DIN rail-mounted SPD
- State indication flag standard on all units
- End-of-life signal standard on 40 kA units



| Network type           | Voltage  | MCOV     | VPR    | Max. disch. | Nominal disch. | Part number      | Repl. Cartridge |
|------------------------|----------|----------|--------|-------------|----------------|------------------|-----------------|
| Split phase 2w+Gnd<br> | 120 V AC | 175 V AC | 0.6 kV | 15 kA       | 5 kA           | OVRT22L15150PU   | OVRT215150CU    |
|                        |          |          |        | 40 kA       | 20 kA          | OVRT2240150PTSU  | OVRT240150CU    |
|                        | 277 V AC | 320 V AC | 1.0 kV | 15 kA       | 5 kA           | OVRT22L15320PU   | OVRT215320CU    |
|                        |          |          |        | 40 kA       | 20 kA          | OVRT22L40320PTSU | OVRT240320CU    |

#### Electrical characteristics

|                     |  |
|---------------------|--|
| Operating frequency | 50–60 Hz   |
| Modes of protection | L-L and L-G  |
| Fault rating (SCCR) | 200 kAIC – Upstream protection required (breaker / fuse) |
| Response time       | < 25 nanoseconds   |
| Standard monitoring | Cartridge state indicator flag                           |

#### Mechanical characteristics

|                               |                                   |
|-------------------------------|-----------------------------------|
| Weight                        | 0.53 lbs. (240 g)                 |
| Housing material              | Thermoplastic, gray RAL 7035 / V0 |
| Installation location         | Type 1, indoor                    |
| Mounting method               | DIN rail                          |
| Operating temperature         | -40 °to 80 °C (-40 °to 175 °F)    |
| Wire range (stranded / solid) | #6–14 AWG / #4–14 AWG             |
| Product design                | MOV technology                    |

OVRT2 series

OVRT2 2N



- Product features**
- Type 4 SPD, UL 1449 4th Edition for Type 2 applications
  - Metal oxide varistor (MOV) technology
  - 2p+N+Gnd complete design
  - Replaceable and pluggable cartridges
  - DIN rail-mounted SPD
  - State indication flag standard on all units
  - End-of-life signal standard on 40 kA units



| Network type | Voltage  | MCOV     | VPR    | Max. disch. | Nominal disch. | Part number      | Repl. Cartridge |
|--------------|----------|----------|--------|-------------|----------------|------------------|-----------------|
|              | 120 V AC | 175 V AC | 0.7 kV | 15 kA       | 5 kA           | OVRT22N15150PU   | OVRT215150CU    |
|              |          |          | 0.6 kV | 40 kA       | 20 kA          | OVRT22N40150PTSU | OVRT240150CU    |
|              | 277 V AC | 320 V AC | 0.7 kV | 15 kA       | 5 kA           | OVRT22N15320PU   | OVRT215320CU    |
|              |          |          | 1.1 kV | 40 kA       | 20 kA          | OVRT22N40320PTSU | OVRT240320CU    |
|              | 347 V AC | 440 V AC | 1.4 kV | 40 kA       | 10 kA          | OVRT22N40440PTSU | OVRT240440CU    |
|              | 480 V AC | 550 V AC | 1.8 kV | 40 kA       | 10 kA          | OVRT22N40550PTSU | OVRT240550CU    |
|              | 600 V AC | 660 V AC | 2.0 kV | 40 kA       | 10 kA          | OVRT22N40660PTSU | OVRT240660CU    |
| Neutral pole | 230 V AC | 255 V AC | 1.2 kV | 70 kA       | 20 kA          | -                | OVRT270NCU      |

| Electrical characteristics    |  |
|-------------------------------|--|
| Operating frequency           | 50–60 Hz   |
| Modes of protection           | L-L, L-N , N-G and L-G                                   |
| Fault rating (SCCR)           | 200 kAIC – Upstream protection required (breaker / fuse) |
| Response time                 | < 25 nanoseconds   |
| Standard monitoring           | Cartridge state indicator flag                           |
| Mechanical characteristics    |  |
| Weight                        | 0.80 lbs. (360 g)  |
| Housing material              | Thermoplastic, gray RAL 7035 / V0                        |
| Installation location         | Type 1, indoor   |
| Mounting method               | DIN rail   |
| Operating temperature         | -40 °to 80 °C (-40 °to 175 °F)                           |
| Wire range (stranded / solid) | #6–14 AWG / #4–14 AWG                                    |
| Product design                | MOV technology   |

## OVRT2 series

### OVRT2 2L



#### Product features

- Type 4 SPD, UL 1449 4th Edition for Type 2 applications
- Metal oxide varistor (MOV) technology
- 3p+Gnd complete design
- Replaceable and pluggable cartridges
- DIN rail-mounted SPD
- State indication flag standard on all units
- End-of-life signal standard on 40 kA units



| Network type | Voltage  | MCOV     | VPR    | Max. disch. | Nominal disch. | Part number      | Repl. Cartridge |
|--------------|----------|----------|--------|-------------|----------------|------------------|-----------------|
|              | 120 V AC | 175 V AC | 0.6 kV | 15 kA       | 5 kA           | OVRT23L15150PU   | OVRT215150CU    |
|              |          |          |        | 40 kA       | 20 kA          | OVRT23L40150PTSU | OVRT240150CU    |
|              | 277 V AC | 320 V AC | 1.0 kV | 15 kA       | 5 kA           | OVRT23L15320PU   | OVRT215320CU    |
|              |          |          |        | 40 kA       | 20 kA          | OVRT23L40320PTSU | OVRT240320CU    |
|              | 347 V AC | 440 V AC | 1.3 kV | 40 kA       | 10 kA          | OVRT23L40440PTSU | OVRT240320CU    |
|              | 480 V AC | 550 V AC | 1.7 kV | 40 kA       | 10 kA          | OVRT23L40550PTSU | OVRT240550CU    |

#### Electrical characteristics

|                     |  |
|---------------------|--|
| Operating frequency | 50–60 Hz   |
| Modes of protection | L-L and L-G  |
| Fault rating (SCCR) | 200 kAIC – Upstream protection required (breaker / fuse) |
| Response time       | < 25 nanoseconds   |
| Standard monitoring | Cartridge state indicator flag                           |

#### Mechanical characteristics

|                               |                                   |
|-------------------------------|-----------------------------------|
| Weight                        | 0.80 lbs. (360 g)                 |
| Housing material              | Thermoplastic, gray RAL 7035 / V0 |
| Installation location         | Type 1, indoor                    |
| Mounting method               | DIN rail                          |
| Operating temperature         | -40 °to 80 °C (-40 °to 175 °F)    |
| Wire range (stranded / solid) | #6–14 AWG / #4–14 AWG             |
| Product design                | MOV technology                    |

OVRT2 series

OVRT2 3N



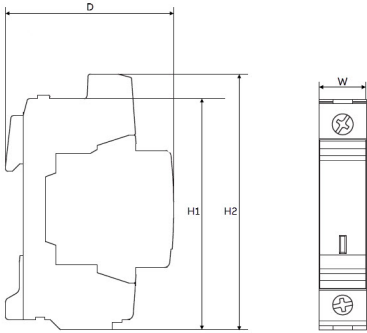
- Product features**
- Type 4 SPD, UL 1449 4th Edition for Type 2 applications
  - Metal oxide varistor (MOV) technology
  - 3p+N+Gnd complete design
  - Replaceable and pluggable cartridges
  - DIN rail-mounted SPD
  - State indication flag standard on all units
  - End-of-life signal standard on 40 kA units

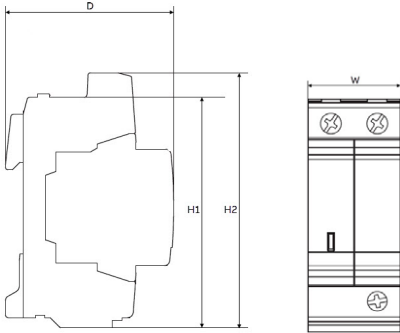


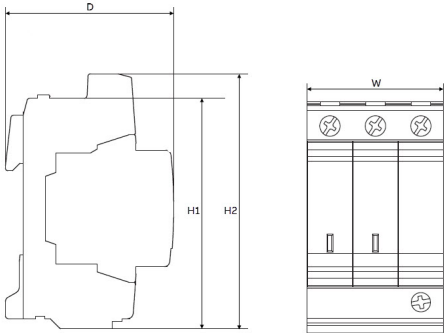
| Network type | Voltage  | MCOV     | VPR    | Max. disch. | Nominal disch. | Part number      | Repl. Cartridge |
|--------------|----------|----------|--------|-------------|----------------|------------------|-----------------|
|              | 120 V AC | 175 V AC | 0.6 kV | 15 kA       | 5 kA           | OVRT23NN15150PU  | OVRT215150CU    |
|              |          |          | 1.2 kV | 40 kA       | 20 kA          | OVRT23N40150PTSU | OVRT240150CU    |
|              | 277 V AC | 320 V AC | 1.2 kV | 15 kA       | 5 kA           | OVRT23N15320PU   | OVRT215320CU    |
|              |          |          |        | 40 kA       | 20 kA          | OVRT23N40320PTSU | OVRT240320CU    |
|              | 347 V AC | 440 V AC | 1.2 kV | 40 kA       | 10 kA          | OVRT23N40440PTSU | OVRT240440CU    |
|              | 480 V AC | 550 V AC | 1.2 kV | 40 kA       | 10 kA          | OVRT23N40550PTSU | OVRT240550CU    |
|              | 600 V AC | 660 V AC | 1.2 kV | 40 kA       | 10 kA          | OVRT23N40660PTSU | OVRT240660CU    |
| Neutral pole | 230 V AC | 255 V AC | 1.2 kV | 70 kA       | 20 kA          | -                | OVRT270NCU      |

| Electrical characteristics    |  |
|-------------------------------|--|
| Operating frequency           | 50–60 Hz   |
| Modes of protection           | L-L and L-G  |
| Fault rating (SCCR)           | 200 kAIC – Upstream protection required (breaker / fuse) |
| Response time                 | < 25 nanoseconds   |
| Standard monitoring           | Cartridge state indicator flag                           |
| Mechanical characteristics    |  |
| Weight                        | 1.05 lbs. (480 g)  |
| Housing material              | Thermoplastic, gray RAL 7035 / V0                        |
| Installation location         | Type 1, indoor   |
| Mounting method               | DIN rail   |
| Operating temperature         | -40 °to 80 °C (-40 °to 175 °F)                           |
| Wire range (stranded / solid) | #6–14 AWG / #4–14 AWG                                    |
| Product design                | MOV technology   |

**OVRT2 series**  
Dimensions

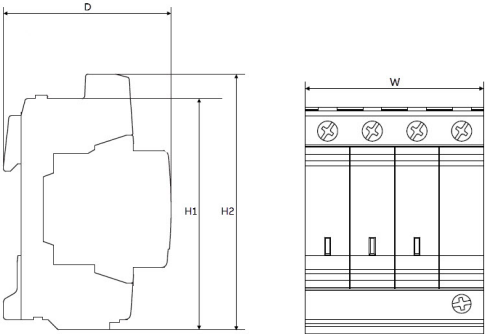
| Dimensions OVRT2  |   |                            |
|---|---|----------------------------|
|  | Value   | Inches / millimeters       |
|   | W   | 0.70 / 17.8                |
|   | D   | 2.55 / 64.8                |
|   | H1 (without TS option)<br>H2 (with TS option) | 3.35 / 85.0<br>3.88 / 98.5 |

| Dimensions OVRT2 1N, OVRT2 2L  |   |                            |
|--|---|----------------------------|
|  | Value   | Inches / millimeters       |
|  | W   | 1.40 / 35.6                |
|  | D   | 2.55 / 64.8                |
|  | H1 (without TS option)<br>H2 (with TS option) | 3.35 / 85.0<br>3.88 / 98.5 |

| Dimensions OVRT2 2N, OVRT2 3L   |   |                            |
|---|---|----------------------------|
|  | Value   | Inches / millimeters       |
|   | W   | 2.10 / 53.4                |
|   | D   | 2.55 / 64.8                |
|   | H1 (without TS option)<br>H2 (with TS option) | 3.35 / 85.0<br>3.88 / 98.5 |

OVRT2 series

Dimensions

| Dimensions OVRT2 3N   |                        |                      |
|---|------------------------|----------------------|
|  | Value                  | Inches / millimeters |
|   | W                      | 2.80 / 71.2          |
|   | D                      | 2.55 / 64.8          |
|   | H1 (without TS option) | 3.35 / 85.0          |
|   | H2 (with TS option)    | 3.88 / 98.5          |



## OVR RS485Q and SL R485 series



The ABB range of data and signal surge protective devices are designed to protect sensitive equipment connected to data and telephone lines. These devices complement the OVR power SPD units for a complete and effective system protection solution against power and data surges.

### Application

OVR RS485Q and SL RS485 series UL 497B listed surge protective devices (SPDs) are specifically designed for RS485 and Fieldbus applications, such as Profibus DP. For installations at service entrances or within the building infrastructure to protect against lightning flashover (typically the service entrance location) and internal transient voltage activity.

Available as compact OVR RS485Q (4-pair) or Slim Line OVR SL RS485 (1-pair) versions for installations where a high number of lines require protection.



OVR SL RS485 and OVR RS485Q/PT have UL 497B approval under UL file QVGO:E240341

| Technical specifications and standards                       |                              |                   |
|--|------------------------------|-------------------|
| Key features   |                              |                   |
| Protection mode  | Normal and common            |                   |
| Status indicator   | LED status indication option |                   |
| Technology   | Multi-stage hybrid           |                   |
| Installation   | DIN rail                     |                   |
|  |                              |                   |
| Electrical specification                                     | OVR SL RS485 series          | OVR RS485Q series |
| Nominal voltage <sup>1</sup>                                 | 15 V                         |                   |
| Maximum working voltage U <sub>c</sub> (RMS/DC) <sup>2</sup> | 11 V / 16.7 V                |                   |
| Current rating (signal)                                      | 300 mA                       |                   |
| In-line resistance (per line ±10%)                           | 1 Ω                          |                   |
| Bandwidth (-3 dB, 50 Ω system)                               | 45 MHz                       |                   |
| Transient specification                                      |                              |                   |
| Let-through voltage (all conductors) <sup>3</sup> Up         |                              |                   |
| C2 test 4 kV 1.2/50 μs, 2 kA 8/20 μs to EN/IEC 61643-21      | 55.0 V                       |                   |
| C1 test 1 kV, 1.2/50 μs, 0.5 kA 8/20 μs to EN/IEC 61643-21   | 42.0 V                       |                   |
| B2 test 4 kV 10/700 μs to EN/IEC 61643-21                    | 27.2 V                       |                   |
| 5 kV, 10/700 μs <sup>4</sup>                                 | 28.2 V                       |                   |

<sup>1</sup>Nominal voltage (RMS/DC or AC peak) measured at < 10 μA

<sup>2</sup>Maximum working voltage (RMS/DC or AC peak) measured at < 5 mA

<sup>3</sup>The maximum transient voltage let-through of the protector throughout the test (±10%), line to line and line to ground, both polarities. Response time < 10 ns

<sup>4</sup>Test to IEC 61000-4-5:2006; ITU-T (formerly CCITT) K.20, K.21 and K.45; Telcordia GR-1089- CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)

OVR RS485Q and SL RS485 series

| Maximum discharge surge current (Imax)          |  | OVR SL RS485 series | OVR RS485Q series |
|---|--|---------------------|-------------------|
| D1 test 10/350 µs to BS EN/EN/IEC 61643-21:     | – Per signal wire 2.5 kA<br>– Per pair | 1.25 kA<br>2.5 kA   | 2.5 kA<br>5 kA    |
| 8/20 µs to ITU-T K.45:2003, IEEE C62.41.2:2002: | – Per signal wire<br>– Per pair        | 10 kA<br>20 kA      |                   |

| Mechanical specification       |        | OVR SL RS485 series  | OVR RS485Q series   |
|--------------------------------|--------|--|---|
| Temperature range              |        | -40 to +80 °C  |   |
| Connection type                |        | Screw terminal — max. torque 0.8 N                         | Pluggable 12-way screw terminal/PT version:<br>Pluggable 12-way screwless push terminal |
| Max. Conductor size (stranded) |        | 12 AWG/ 4 mm²  | 14 AWG/ 2.5 mm²   |
| Ground connection              |        | Via DIN rail or 4 mm² ground terminal — max. torque 0.8 Nm | Via DIN rail or M5 threaded hole in base of unit  |
| Case material                  |        | FR Polymer UL 94 V-0                                       |   |
| Weight                         | – Unit | 0.08 kg/ 0.18 lb   | 0.1 kg/ 0.22 lb   |
| Dimensions                     |        | See diagram below  |   |

| Available configurations |                 |         |   |
|--------------------------|-----------------|---------|---|
| Catalog number           | Global ID       | # Pairs | Description   |
| OVRSLRS485UL             | 7TCA085400R0551 | 1       | Slim Line, RS485, 1 pair + shield/screen  |
| OVRSLRS485LUL            | 7TCA085400R0552 | 1       | Slim Line, RS485, 1 pair + shield/screen, with LED status indication                        |
| OVRSLRS485LMUL           | 7TCA085400R0600 | 1       | Replacement module for Slim Line, RS485, 1 pair + shield/screen, with LED status indication |
| OVRRS485QUL              | 7TCA085400R0572 | 4       | Pluggable screw terminals, RS485, 4 pair + shield/screen for each pair                      |
| OVRRS485QPTUL            | 7TCA085400R0579 | 4       | Pluggable push-in terminals, RS485, 4 pair + shield/screen for each pair                    |

## OVR Q series



The ABB OVR Q series of data and signal surge protective devices are designed to protect sensitive equipment connected to data and telephone lines. These devices complement the OVR power SPD units for a complete and effective system protection solution against surges on data and power lines.

### Application

OVR Q series UL 497B listed surge protective devices (SPDs) are specifically designed for where installation space is at a premium and large numbers of lines require protection. For installations, connect in series with the signal or data line either near where it enters or leaves the building or close to the equipment being protected. Install in a cabinet/cubicle close to the system's ground star to protect against lightning flashover (typically the service entrance location) and internal transient voltage activity.



OVR Q series has UL 497B approval under UL file QVGO:E240341

### Technical specifications and standards

#### Key features

|                  |                    |
|------------------|--------------------|
| Protection mode  | Normal and common  |
| Status indicator | No                 |
| Technology       | Multi-stage hybrid |
| Installation     | DIN rail           |

#### Electrical specification

| Electrical specification                            | OVR Q series |
|---|--------------|
| Nominal voltage <sup>1</sup>                        | 30 V         |
| Maximum working voltage $U_c$ (RMS/DC) <sup>2</sup> | 26 V/ 37.8 V |
| Current rating (signal)                             | –            |
| In-line resistance (per line $\pm 10\%$ )           | –            |
| Bandwidth ( $-3$ dB, 50 $\Omega$ system)            | –            |

#### Transient specification

##### Let-through voltage (all conductors)<sup>3</sup> Up

|  |        |
|--|--------|
| C2 test 4 kV 1.2/50 $\mu$ s, 2 kA 8/20 $\mu$ s to EN/IEC 61643-21    | 53.0 V |
| C1 test 1 kV, 1.2/50 $\mu$ s, 0.5 kA 8/20 $\mu$ s to EN/IEC 61643-21 | 48.0 V |
| B2 test 4 kV 10/700 $\mu$ s to EN/IEC 61643-21                       | 43.5 V |
| 5 kV, 10/700 $\mu$ s <sup>4</sup>                                    | 44.3 V |

<sup>1</sup>Nominal voltage (RMS/DC or AC peak) measured at  $< 5 \mu$ A

<sup>2</sup>Maximum working voltage (RMS/DC or AC peak) measured at  $< 5$  mA leakage (OVR 30Q)

<sup>3</sup>The maximum transient voltage let-through of the protector throughout the test ( $\pm 10\%$ ), line to line and line to ground, both polarities. Response time  $< 10$  ns

<sup>4</sup>Test to IEC 61000-4-5:2006, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 formerly FCC Part 68)

OVR Q series

| Maximum discharge surge current (Imax) |                   | OVR Q series |
|--|-------------------|--------------|
| D1 test 10/350 μs to                   | – Per signal wire | 2.5 kA       |
| BS EN/EN/IEC 61643-21                  | – Per pair        | 5 kA         |
| 8/20 μs to ITU-T K.45:2003,            | – Per signal wire | 10 kA        |
| IEEE C62.41.2:2002:                    | – Per pair        | 20 kA        |

| Mechanical specification  | OVR Q series  |
|---------------------------|---|
| Temperature range         | -40 to +80 °C   |
| Installation location     | Connect in series with the signal or data line either near where it enters or leaves the building or close to the equipment being protected. Install in a cabinet/ cubicle close to the system's ground star point. |
| Connection type           | Pluggable 12-way screw terminal - maximum torque 0.6 Nm/<br>PT version: Pluggable 12-way screwless push terminal  |
| Conductor size (stranded) | 2.5 mm²   |
| Ground connection         | Via DIN rail or M5 threaded hole in base of unit  |
| Case material             | FR polymer UL 94 V-0  |
| Weight:                   |   |
| – Unit                    | 0.1 kg  |
| – Packaged (each)         | 0.12 kg   |
| Dimensions                | See diagram below   |

| Available configurations |         |                               |                 |
|--------------------------|---------|-------------------------------|-----------------|
| Catalog number           | Voltage | Description                   | Global ID       |
| OVR30QUL                 | 30 V    | With screw terminals          | 7TCA085400R0568 |
| OVR30QPTUL               | 30 V    | With screwless push terminals | 7TCA085400R0575 |

## OVR SL series



The ABB OVR SL series of data and signal surge protective devices are designed to protect sensitive equipment connected to data and telephone lines. These devices complement the OVR power SPD units for a complete and effective system protection solution against surges for data and power lines.

### Application

OVR SL series UL 497B listed surge protective devices (SPDs) are specifically designed for applications where installation space is at a premium and a large number of lines require protection (e.g., process control, high-speed digital communication equipment or systems with long signal lines).

Connect in series with the data communication or signal line either near or where it enters or leaves the building or close to the equipment being protected (e.g., within its control panel.) It must be close to the system's ground star point. Install the SPD within an existing cabinet/cubicle or in a separate enclosure.



OVR SL series have UL 497B approval under UL file QVGO:E240341

### Technical specifications and standards

#### Key features

|                 |                    |
|-----------------|--------------------|
| Protection mode | Normal and common  |
| Technology      | Multi-stage hybrid |
| Installation    | DIN rail           |

| Electrical specification                                 | OVR SL06 series | OVR SL30 series | OVR SL180 series |
|--|-----------------|-----------------|------------------|
| Nominal voltage <sup>1</sup>                             | 6 V             | 30 V            | 180 V            |
| Maximum working voltage U <sub>c</sub> (DC) <sup>2</sup> | 7.79 V          | 36.7 V          | 190 V            |
| Maximum working voltage U <sub>c</sub> (AC RMS)          | 5 V             | 25 V            | 130 V            |
| Current rating (signal)                                  | 750 mA          | -               | 250 mA           |
| In-line resistance (per line ±10%)                       | 1 Ω             | -               | 6.8 Ω            |
| Bandwidth (-3 dB 50 Ω system)                            | 45 MHz          | -               | -                |

<sup>1</sup>Nominal voltage (RMS/DC or AC peak) measured at < 5 μA

<sup>2</sup>Maximum working voltage (RMS/DC or AC peak) measured at < 5 mA leakage

OVR SL series

| Transient specification  |                      | OVR SL06 series | OVR SL30 series | OVR SL180 series |
|--|----------------------|-----------------|-----------------|------------------|
| Let-through voltage (all conductors) <sup>3</sup> Up             |                      |                 |                 |                  |
| C2 test 4 kV 1.2/50 µs, 2 kA 8/20 µs to BS EN/EN/IEC 61643-21    |                      | 36.0 V          | 63.0 V          | 215 V            |
| C1 test 1 kV, 1.2/50 µs, 0.5 kA 8/20 µs to BS EN/EN/IEC 61643-21 |                      | 26.2 V          | 51.3 V          | 205 V            |
| B2 test 4 kV 10/700 µs to BS EN/EN/ IEC 61643-21                 |                      | 16.0 V          | 45.4 V          | 203 V            |
| 5 kV, 10/700 µs <sup>4</sup>                                     |                      | 17.0 V          | 46.3 V          | 200 V            |
| Maximum surge current  |                      |                 |                 |                  |
| D1 test 10/350 µs to EN/EN/IEC 61643-21                          | – per signal wire BS | 1.25 kA         | –               | –                |
|  | – per pair           | 2.5 kA          | –               | –                |
| 8/20 µs to ITU-T K.45:2003 IEEE C62.41.2:2002                    | – per signal wire    | 10 kA           | –               | –                |
|  | – per pair           | 20 kA           | –               | –                |

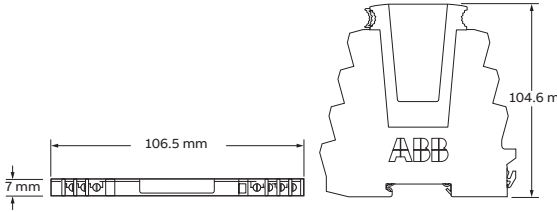
<sup>3</sup>The maximum transient voltage let-through of the protector throughout the test (±10%), line to line and line to ground, both polarities Response time < 10 ns  
<sup>4</sup>Test to IEC 61000-4-5:2006, ITU-T (formerly CCITT) K.20, K.21 and K.45, Telcordia GR-1089-CORE, Issue 2:2002, ANSI TIA/EIA/IS-968-A:2002 (formerly FCC Part 68)

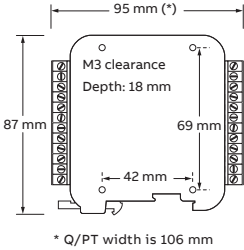
| Mechanical specification  |        |   |
|---------------------------|--------|---|
| Temperature range         |        | -40 to +80 °C   |
| Installation location     |        | Connect in series with the data communication or signal line either near where it enters or leaves the building or close to the equipment being protected (e.g., within its control panel). Either way, it must be very close to the system's ground star point. Install SPDs either within an existing cabinet/cubicle or in a separate enclosure. |
| Connection type           |        | Screw terminal - maximum torque 0.8 Nm  |
| Conductor size (stranded) |        | 4 mm <sup>2</sup>   |
| Ground connection         |        | Via DIN rail or 4 mm <sup>2</sup> ground terminal — max. torque 0.8 Nm  |
| Case material             |        | FR polymer UL 94 V-0  |
| Weight                    | – unit | 0.08 kg   |
| Dimensions                |        | See diagram below   |

| Available configurations |  |                 |
|--------------------------|--|-----------------|
| Catalog number           | Description  | Global ID       |
| OVRSL06UL                | 6 V slim data SPD for 2-wire signal                      | 7TCA085400R0527 |
| OVRSL06IUL               | 6 V slim data SPD for 2-wire signal and isolated shield  | 7TCA085400R0528 |
| OVRSL30UL                | 30 V slim data SPD for 2-wire signal                     | 7TCA085400R0535 |
| OVRSL30IUL               | 30 V slim data SPD for 2-wire signal and isolated shield | 7TCA085400R0536 |
| OVRSL180UL               | 180 V slim data SPD for 2-wire signal                    | 7TCA085400R0547 |

# OVR SL RS485 and OVR RS485Q series

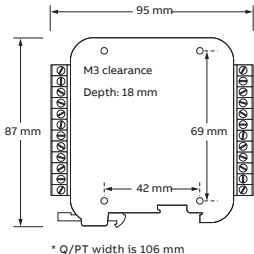
## Dimensions

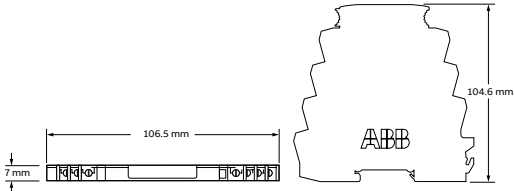
| Dimensions OVR SL RS485   |       |                      |
|---|-------|----------------------|
|  | Value | Inches / millimeters |
|   | W     | 4.19 / 106.5         |
|   | D     | 0.28 / 7             |
|   | H     | 4.12 / 104.6         |

| Dimensions OVR RS485Q   |       |                      |
|---|-------|----------------------|
|  | Value | Inches / millimeters |
|   | W     | 3.74 / 95            |
|   | D     | 0.71 / 18            |
|   | H     | 3.42 / 87            |

OVR Q and OVR SL series

Dimensions

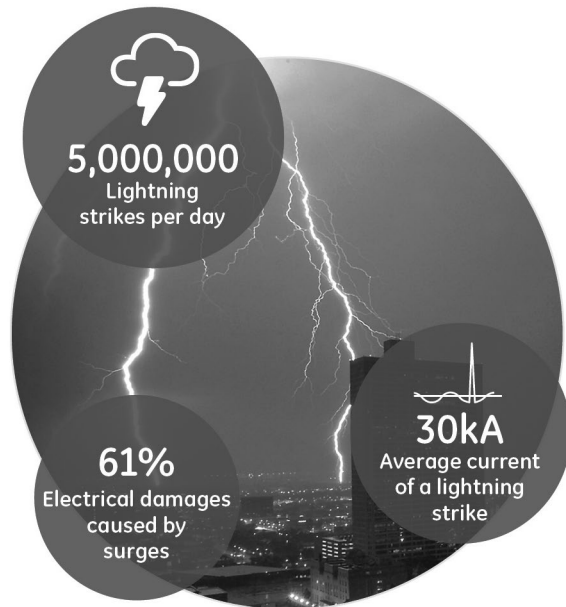
| Dimensions OVR Q series   |       |                      |
|---|-------|----------------------|
|  | Value | Inches / millimeters |
|   | W     | 3.74 / 95            |
|   | D     | 0.71 / 18            |
|   | H     | 3.42 / 87            |

| Dimensions OVR SL   |       |                      |
|---|-------|----------------------|
|  | Value | Inches / millimeters |
|   | W     | 4.19 / 106.5         |
|   | D     | 0.28 / 7             |
|   | H     | 4.12 / 104.6         |



## DIN-rail SPDs for distribution panels

UL 1449 4th edition



### Risk of Electrical Surges

Lightning and surge protection electrical and electronic equipment is indispensable in the daily activities of today's businesses and individuals.

Such devices are connected to the electricity grid, often exchanging data and signals through communication lines and are usually sensitive to disturbances.

These interconnecting networks provide a propagation path for overvoltages.

Protection against lightning and overvoltages not only ensures the safety of people, goods and equipment, but also ensures continuity of installation services and meets criteria of energy efficiency.

Overvoltage protection extends the life of the equipment by more than 20%, which significantly reduces the volume of electronic waste. It also reduces the power consumption of the installations, all of which translates into cost savings and environmental sustainability.

### Transient Voltage Surges in LV Power Lines

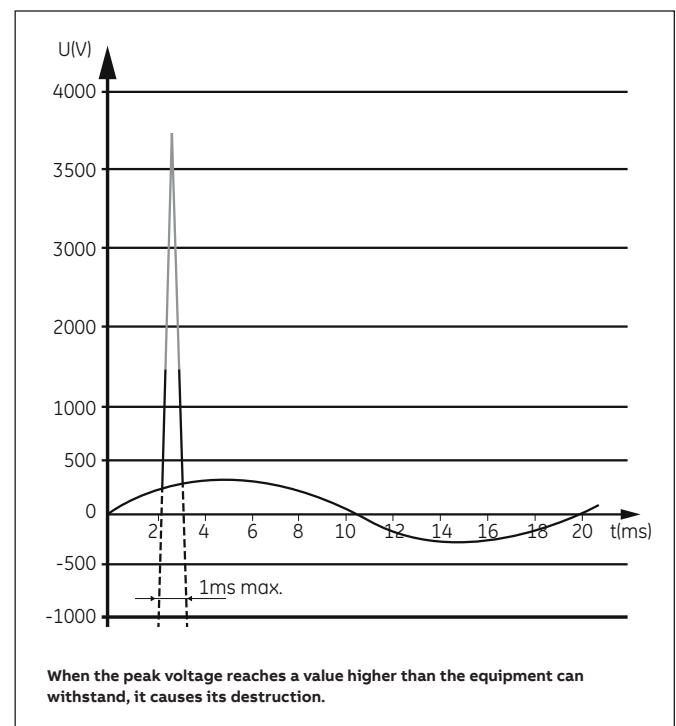
Transient overvoltages are voltage surges that can reach tens of kilovolts with a duration in the order of microseconds.

Despite their short duration, the high energy content can cause serious problems to equipment connected to the line, from premature aging to destruction, causing disruptions to service and financial loss.

This type of surge can have various different causes, including atmospheric lightning directly striking the external protection (lightning rods) on a building or transmission line, or the associated induction of electromagnetic fields on metallic conductors. Outdoor and longer lines are the most exposed to these fields, which often receive high levels of induction.

It is also common for non-weather phenomena such as transformer center switching or the disconnection of motors or other inductive loads to cause voltage spikes in adjacent lines.

The protector will discharge excess energy to earth, thus limiting the peak voltage to a value acceptable for the electrical equipment connected.



## DIN-rail SPDs for distribution panels

UL 1449 4th edition

Terminology of SPD electrical characteristics

$I_{max}$

### Maximum Discharge Capacity

Maximum peak current, per phase, in 8/20  $\mu$ s wave that the protection device is able to withstand.

VPR

### Voltage Protection Rating

This indicates the maximum residual voltage between the terminals of the protection device during application of an  $I_n$  peak current.

$I_n$

### Nominal Discharge Current Rating

Peak current in 8/20  $\mu$ s wave that the protection device can withstand on 15 occasions without reaching the end of its service life.

MCOV

### Maximum Continuous Operating Voltage

This indicates the maximum effective or direct current voltage that can be permanently applied to the terminals of the protection device.

TYPE

### Type 1

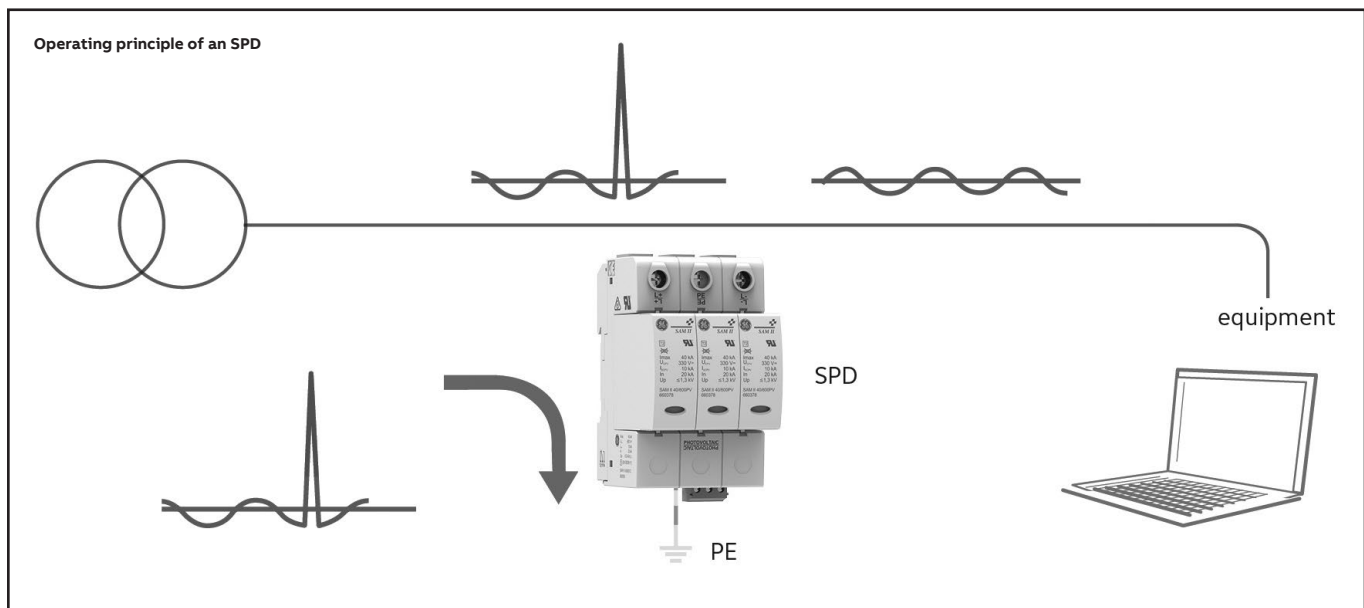
Permanently connected SPDs intended for installation between the secondary of the service transformer and the line side of the service equipment (main panel) overcurrent device, as well as the load side, including watt-hour meter socket enclosures and intended to be installed without an external overcurrent protective device.

### Type 2

Permanently connected SPDs intended for installation on the load side of the service equipment (main panel) overcurrent device; including SPDs located at the branch panel.

### Type 3

Point of utilization SPDs, installed at a minimum conductor length of 30 feet (10 meters) from the electrical service panel to the point of utilization. For example cord connected, direct plug-in, receptacle type and SPDs installed at the utilization equipment being protected. The distance 30 feet (10 meters) is exclusive of conductors provided with or used to attach SPDs that the protection device is able to withstand.



## DIN-rail SPDs for distribution panels

UL 1449 4th edition

Standards

The Underwriters Laboratories (UL) standard for surge protective devices (SPDs) has been the primary safety standard for surge protection since the first edition was published in 1985, the fourth edition became mandatory for AC SPDs in March 2016.

The objective of UL 1449 has always been to increase safety in terms of surge protection.

### Change in the standard's name: From TVSS to SPDs

Prior to UL 1449 4th Edition taking effect, the devices this standard covers were known as Transient Voltage Surge Suppressors (TVSS), operating on power circuits not exceeding 600 V. With the inception of the 3<sup>rd</sup> and 4<sup>th</sup> Edition, these devices are now known as Surge Protective Devices (SPDs), and may operate on power circuits not exceeding 1500 V DC.

This new designation moves the UL standard closer to the international designation and to IEC standards.

### The different type designations of surge protective devices

The UL 1449 placed SPDs into five different Type categories based on installation location within an electrical system. While Type 1, Type 2 and Type 3 categories refer to different types of SPDs that can be installed at specific locations, Type 4 and Type 5 categories refer to components used in an SPDs configuration.

**Type 1** - "Permanently connected SPDs intended for installation between the secondary of the service transformer and the line side of the service equipment overcurrent device."

**Type 2** - "Permanently connected SPDs intended for installation on the load side of the service equipment overcurrent device."

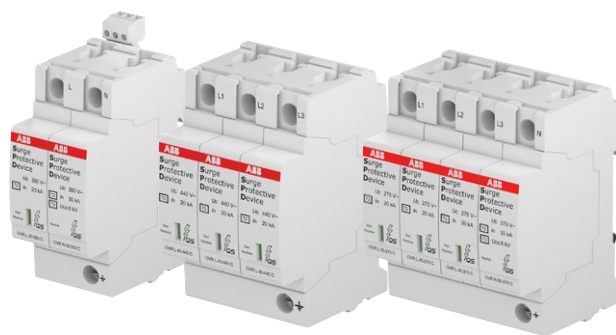
**Type 3** - "Point of utilization SPDs, installed at a minimum conductor length of 10 meters (30 feet) from the electrical service panel."

**Type 4** - Component assemblies - "Component assembly consisting of one or more Type 5 components together with a disconnect (integral or external) or a means of complying with the limited current tests."

**Type 1, 2, 3** - Component assemblies - "Consists of a Type 4 component assembly with internal or external short circuit protection."

**Type 5** - "Discrete component surge suppressors, such as MOVs that may be mounted on a PWB, connected by its leads or provided within an enclosure with mounting means and wiring terminations."

The closer an SPD is installed to the equipment, the better the protection is. This is a push in the direction of providing stepped protection including external and internal surge protection.



### The measured voltage protection level

The Measured Limiting Voltage (MLV) is the maximum magnitude of voltage measured at the application of a specific impulse wave shape.

When applying a certain surge current on the SPD the measured voltage at the device terminals is the so called "let-through voltage."

In UL 1449 2nd Edition, the let-through voltage was referred to as Suppressed Voltage Rating (SVR) and was calculated with a 0.5 kA surge wave form at 6 kV. The new designation is Voltage Protection Rating (VPR) and is calculated with a 3 kA surge wave form at 6 kV.

All products you will find in this chapter have been certified according to the UL 1449 4th Edition.

The MLV will allow comparison of different types of SPDs with regards to the let-through voltage. However, it is important to note that the surge current used to measure the let-through voltage is six times higher in the 3<sup>rd</sup> and 4<sup>th</sup> Edition than in the 2<sup>nd</sup> Edition. This means that, comparing the obsolete SVR designation with the new VPR ratings will not be valid, as VPR ratings will of course be higher than SVR ratings.

DIN-rail SPDs for distribution panels

UL 1449 4th edition

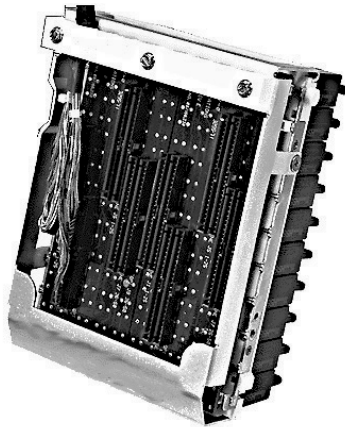
Standards

**Wiring Diagrams According to ANSI C84.1**  
The majority of modern installations in both the US and Canada feature the following kind of power distribution system.



| Single Phase System   |   | Residential Buildings   |
|---|---|---|
| <div>Single Phase 2 Wires<br/>120/240/277V</div> <div></div>            | <div>Split Phase 3 Wires<br/>240/120V, 480/240V</div> <div></div> | <p>i.e. Single phase 240 (Ph-Ph)/120V (to GRND) Grounded midpoint</p> <p>For example:<br/>120V are used on the wall receptacle and 240V for ovens, ranges, air conditioning and laundry dryers</p>                |
| Three Phase/Three Wire System   |   | Industrial and Commercial Buildings   |
| <div>Delta 240/480/600V</div> <div></div>                               |   |   |
| Three Phase/Four Wire System  |   | Industrial and Commercial Buildings   |
| <div>Grounded Wye<br/>208Y/120V, 480Y/277V, 600Y/347V</div> <div></div> | <div>High-Leg Delta<br/>240/120V HLD</div> <div></div>            | <p>* Y describes the solidly grounded circuit.<br/>The value “Y” indicates the voltage between phases. The value behind the slash indicates the voltage between phase and the grounding or neutral conductor.</p> |

## Protection block assembly



Protection Block Assembly

### Introduction

The ABB 427 patented 5 Pin Protection Block Assembly is equipped with a multi-layered printed circuit board, providing a connectorized interface for cable assemblies. It accommodates 25, 50 or 100 pair cable. It is used in many applications, including: central offices, remote switching sites, customer premises and building entrances, to protect telephone and voice/data lines.

When wiring cabinets with conventional wire wrap blocks each block becomes a different part number and causes difficulty for OEMs who have to inventory parts.

The same ABB 427 Protection Block Assembly is used in every position of a cabinet or mainframe. The cables are now treated as less expensive parts and are stocked by length and mating connector type. Manual labor, in running cables and making wire wrap connections, is reduced significantly by employing ABB Connectorized Block Assemblies.

### Protection Block Assembly - Surge Protection Device

| Pair | Block Type    | Hood | Product Number |
|------|---------------|------|----------------|
| 50   | Marconi Block | YES  | 427-050-202    |
| 100  | Avaya Block   | YES  | 427-100-102    |
| 100  | Marconi Block | YES  | 427-100-202    |
| 100  | Corning Block | YES  | 427-100-302    |

### Specifications

|                   |                 |
|-------------------|-----------------|
| Voltage Class:    | 600V            |
| BIL rating:       | 10kV            |
| Primary Currents: | 10 to 5000 amps |

### Performance Features

- Gold pins and sockets ensure proper electrical connections
- Self-locking aluminum hood (optional) provides protection to connectors and printed circuit board and serves as the cable strain relief tie point
- Multi-layered printed circuit board
- Handle heavy transient current surges
- U.S. Patent No. 5,457,593

### Benefits

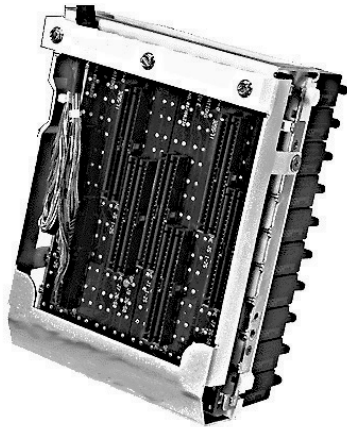
- Provides maximum reliability by eliminating all wire wraps
- Provides the high quality installation of a protection block
- Provides additional flexibility for equipment installations
- Easily serviceable in the field
- Eliminates the need for wire wrapping
- Allows connectorization into many different applications and greatly reduces installation, labor and repair costs
- All cables connected to this unit can be removed, permitting specific cable change out or change out of the entire protection block assembly. This allows the protected equipment to quickly be put back into service.
- Covered by a two year limited product warranty



Notes

Lined area for notes, consisting of multiple horizontal lines.

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