

# Service Entrance Suppressor(F), 160 kA



The nVent ERICO SES160F Series is an enhanced version of the SES160B Series. The SES160F Surge-Filter is robust, with a 160 kA per phase surge rating. The high surge rating increases both survivability and life cycle. With the addition of a filter nuisance high frequency transients on the power distribution system are attenuated, protecting sensitive equipment. cUL® 1449 Listed SPD for Type 2 locations. Applications include service entrance, distribution, branch panels, MCC, lighting panels, HVAC, A/V systems, IT equipment, and more.

## FEATURES

Compact design can be directly mounted to panel or installed in a small space

Front-facing design eases installation and performance monitoring

160 kA 8/20  $\mu$ s maximum surge rating per phase

Up to 57 dB attenuation (10 kHz to 100 MHz)

Optional Flush Mounting Plate

Ground reference monitoring triggers an alarm when N-PE mode exceeds 20 volts

10-year limited warranty



## SPECIFICATIONS

Table 1/2

| Catalog Number              | SES160F480Y | SES160F120V | SES160F240V | SES160F240D | SES160F208Y | SES160F480D |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Nominal System Voltage (Un) | 277/480 V   | 120 V       | 240 V       | 240 V       | 120/208 V   | 480 V       |

| CatalogNumber                            | SES160F480Y                                                                           | SES160F120V                                                                           | SES160F240V                                                                           | SES160F240D                                                                           | SES160F208Y                                                                           | SES160F480D                                                                           |
|------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Distribution System                      | 3Ph Y 4W+G                                                                            | 3PhΔ 3W+G                                                                             | 1Ph 2W+G                                                                              | 3PhΔ 3W+G                                                                             | 3Ph Y 4W+G                                                                            | 3PhΔ 3W+G                                                                             |
| Max Continuous Operating Voltage (Uc)    | 350/700 V                                                                             | 180 V                                                                                 | 350 V                                                                                 | 275 V                                                                                 | 150/300 V                                                                             | 550 V                                                                                 |
| Filtering                                | -40 dB @ 100 kHz                                                                      | -40 dB @ 100 kHz                                                                      | -40 dB @ 100 kHz                                                                      | -40 dB @ 100 kHz                                                                      | -40 dB @ 100 kHz                                                                      | -40 dB @ 100 kHz                                                                      |
| Frequency                                | 0 - 600 Hz                                                                            | 0 - 600 Hz                                                                            | 0 - 600 Hz                                                                            | 0 - 600 Hz                                                                            | 0 - 600 Hz                                                                            | 0 - 600 Hz                                                                            |
| Short Circuit Current Rating (SCCR)      | 200kA                                                                                 | 200kA                                                                                 | 200kA                                                                                 | 200kA                                                                                 | 200kA                                                                                 | 200kA                                                                                 |
| Nominal Discharge Current (In), Per Mode | 20kA 8/20 μs                                                                          | 20kA 8/20 μs                                                                          | 20kA 8/20 μs                                                                          | 20kA 8/20 μs                                                                          | 20kA 8/20 μs                                                                          | 20kA 8/20 μs                                                                          |
| Max Discharge Current (Imax), Per Phase  | 160kA 8/20 μs                                                                         | 160kA 8/20 μs                                                                         | 160kA 8/20 μs                                                                         | 160kA 8/20 μs                                                                         | 160kA 8/20 μs                                                                         | 160kA 8/20 μs                                                                         |
| Voltage Protection Rating (VPR), L-L     | 2500V                                                                                 |                                                                                       |                                                                                       | 1200V                                                                                 | 1200V                                                                                 | 1800V                                                                                 |
| Voltage Protection Rating (VPR), L-N     | 1200V                                                                                 | 700V                                                                                  | 1200V                                                                                 |                                                                                       | 700V                                                                                  |                                                                                       |
| Voltage Protection Rating (VPR), L-PE    | 1200V                                                                                 | 700V                                                                                  | 1200V                                                                                 | 1000V                                                                                 | 700V                                                                                  | 1800V                                                                                 |
| Voltage Protection Rating (VPR), N-PE    | 1200V                                                                                 | 700V                                                                                  | 1200V                                                                                 |                                                                                       | 600V                                                                                  |                                                                                       |
| Protection Modes                         | All modes protected                                                                   | All modes protected                                                                   | All modes protected                                                                   | All modes protected                                                                   | All modes protected                                                                   | All modes protected                                                                   |
| Status Indication                        | 1 green LED per line<br>Audible alarm<br>Change-over contact (Form C dry), 240 VAC/2A | 1 green LED per line<br>Audible alarm<br>Change-over contact (Form C dry), 240 VAC/2A | 1 green LED per line<br>Audible alarm<br>Change-over contact (Form C dry), 240 VAC/2A | 1 green LED per line<br>Audible alarm<br>Change-over contact (Form C dry), 240 VAC/2A | 1 green LED per line<br>Audible alarm<br>Change-over contact (Form C dry), 240 VAC/2A | 1 green LED per line<br>Audible alarm<br>Change-over contact (Form C dry), 240 VAC/2A |

|                                   |                      |                      |                      |                      |                      |                      |
|-----------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Remote Contact Switching Capacity | 2 A @ 240 V          | 2 A @ 240 V          | 2 A @ 240 V          | 2 A @ 240 V          | 2 A @ 240 V          | 2 A @ 240 V          |
| Remote Contacts                   | Yes                  | Yes                  | Yes                  | Yes                  | Yes                  | Yes                  |
| Lead Length                       | 457mm                | 457mm                | 457mm                | 457mm                | 457mm                | 457mm                |
| Lead Size                         | 3.31 mm <sup>2</sup> | 3.31 mm <sup>2</sup> | 3.31 mm <sup>2</sup> | 3.31 mm <sup>2</sup> | 3.31 mm <sup>2</sup> | 3.31 mm <sup>2</sup> |

| Table 2/2             |                                                                                                                                                        |                                                                                                                                                        |                                                                                                                                                        |                                                                                                                                                        |                                                                                                                                                        |                                                                                                                                                        |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Catalog Number        | SES160F480Y                                                                                                                                            | SES160F120V                                                                                                                                            | SES160F240V                                                                                                                                            | SES160F240D                                                                                                                                            | SES160F208Y                                                                                                                                            | SES160F480D                                                                                                                                            |
| Temperature           | -40 to 85 °C                                                                                                                                           | -40 to 85 °C                                                                                                                                           | -40 to 85 °C                                                                                                                                           | -40 to 85 °C                                                                                                                                           | -40 to 85 °C                                                                                                                                           | -40 to 85 °C                                                                                                                                           |
| Enclosure Material    | Polycarbonate                                                                                                                                          | Polycarbonate                                                                                                                                          | Polycarbonate                                                                                                                                          | Polycarbonate                                                                                                                                          | Polycarbonate                                                                                                                                          | Polycarbonate                                                                                                                                          |
| Enclosure Rating      | NEMA®-4X<br>UL® 50E Type 4                                                                                                                             | NEMA®-4X<br>UL® 50E Type 4                                                                                                                             | NEMA®-4X<br>UL® 50E Type 4                                                                                                                             | NEMA®-4X<br>UL® 50E Type 4                                                                                                                             | NEMA®-4X<br>UL® 50E Type 4                                                                                                                             | NEMA®-4X<br>UL® 50E Type 4                                                                                                                             |
| Mounting              | 3/4" straight nipple                                                                                                                                   | 3/4" straight nipple                                                                                                                                   | 3/4" straight nipple                                                                                                                                   | 3/4" straight nipple                                                                                                                                   | 3/4" straight nipple                                                                                                                                   | 3/4" straight nipple                                                                                                                                   |
| Unit Weight           | 0.63 kg                                                                                                                                                | 0.63 kg                                                                                                                                                | 0.63 kg                                                                                                                                                | 0.63 kg                                                                                                                                                | 0.63 kg                                                                                                                                                | 0.63 kg                                                                                                                                                |
| Certification Details | CSA C22.2 No. 269.2<br>UL® 1283<br>Edition 7<br>UL® 1449<br>Edition 5 Type 2, 20 kA Mode                                                               | CSA C22.2 No. 269.2<br>UL® 1283<br>Edition 7<br>UL® 1449<br>Edition 5 Type 2, 20 kA Mode                                                               | CSA C22.2 No. 269.2<br>UL® 1283<br>Edition 7<br>UL® 1449<br>Edition 5 Type 2, 20 kA Mode                                                               | CSA C22.2 No. 269.2<br>UL® 1283<br>Edition 7<br>UL® 1449<br>Edition 5 Type 2, 20 kA Mode                                                               | CSA C22.2 No. 269.2<br>UL® 1283<br>Edition 7<br>UL® 1449<br>Edition 5 Type 2, 20 kA Mode                                                               | CSA C22.2 No. 269.2<br>UL® 1283<br>Edition 7<br>UL® 1449<br>Edition 5 Type 2, 20 kA Mode                                                               |
| Complies With         | ANSI®/IEEE® C62.41.2-2002<br>Cat A, Cat B, Cat C<br>ANSI®/IEEE® C62.41.1-2002<br>Cat A, Cat B, Cat C<br>ANSI®/IEEE® C62.45-2002<br>Cat A, Cat B, Cat C | ANSI®/IEEE® C62.41.2-2002<br>Cat A, Cat B, Cat C<br>ANSI®/IEEE® C62.41.1-2002<br>Cat A, Cat B, Cat C<br>ANSI®/IEEE® C62.45-2002<br>Cat A, Cat B, Cat C | ANSI®/IEEE® C62.41.2-2002<br>Cat A, Cat B, Cat C<br>ANSI®/IEEE® C62.41.1-2002<br>Cat A, Cat B, Cat C<br>ANSI®/IEEE® C62.45-2002<br>Cat A, Cat B, Cat C | ANSI®/IEEE® C62.41.2-2002<br>Cat A, Cat B, Cat C<br>ANSI®/IEEE® C62.41.1-2002<br>Cat A, Cat B, Cat C<br>ANSI®/IEEE® C62.45-2002<br>Cat A, Cat B, Cat C | ANSI®/IEEE® C62.41.2-2002<br>Cat A, Cat B, Cat C<br>ANSI®/IEEE® C62.41.1-2002<br>Cat A, Cat B, Cat C<br>ANSI®/IEEE® C62.45-2002<br>Cat A, Cat B, Cat C | ANSI®/IEEE® C62.41.2-2002<br>Cat A, Cat B, Cat C<br>ANSI®/IEEE® C62.41.1-2002<br>Cat A, Cat B, Cat C<br>ANSI®/IEEE® C62.45-2002<br>Cat A, Cat B, Cat C |
| Depth (D)             | 77.7mm                                                                                                                                                 | 77.7mm                                                                                                                                                 | 77.7mm                                                                                                                                                 | 77.7mm                                                                                                                                                 | 77.7mm                                                                                                                                                 | 77.7mm                                                                                                                                                 |
| Height (H)            | 69.9 mm                                                                                                                                                | 69.9 mm                                                                                                                                                | 69.9 mm                                                                                                                                                | 69.9 mm                                                                                                                                                | 69.9 mm                                                                                                                                                | 69.9 mm                                                                                                                                                |
| Width (W)             | 202 mm                                                                                                                                                 | 202 mm                                                                                                                                                 | 202 mm                                                                                                                                                 | 202 mm                                                                                                                                                 | 202 mm                                                                                                                                                 | 202 mm                                                                                                                                                 |
| Certifications        | UL, cUL                                                                                                                                                | cUL, UL                                                                                                                                                | cUL, UL                                                                                                                                                | cUL, UL                                                                                                                                                | UL, cUL                                                                                                                                                | cUL, UL                                                                                                                                                |

Table 1/2

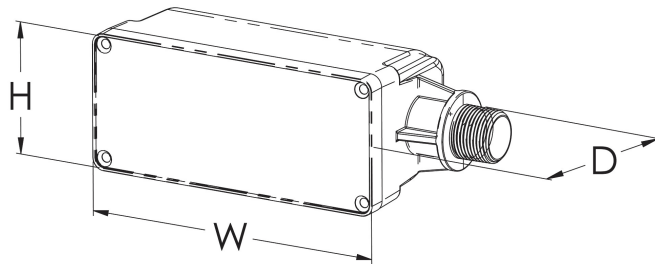
| Catalog Number                           | SES160F120240SP                                                                       | SES160F120240D                                                   | SES160F600Y                                                      |
|------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------|
| Nominal System Voltage (Un)              | 120/240 V                                                                             | 120/240 V                                                        | 347/600 V                                                        |
| Distribution System                      | 1Ph 3W+G                                                                              | 3PhΔ 3W+G                                                        | 3Ph Y 4W+G                                                       |
| Max Continuous Operating Voltage (Uc)    | 180/360 V                                                                             | 180/275 V                                                        | 440/880 V                                                        |
| Filtering                                | -40 dB @ 100 kHz                                                                      | -40 dB @ 100 kHz                                                 | -40 dB @ 100 kHz                                                 |
| Frequency                                | 0 - 600 Hz                                                                            | 0 - 600                                                          | 0 - 600                                                          |
| Short Circuit Current Rating (SCCR)      | 200kA                                                                                 | 200                                                              | 200                                                              |
| Nominal Discharge Current (In), Per Mode | 20kA 8/20 μs                                                                          | 20kA 8/20 μs                                                     | 20kA 8/20 μs                                                     |
| Max Discharge Current (Imax), Per Phase  | 160kA 8/20 μs                                                                         |                                                                  |                                                                  |
| Voltage Protection Rating (VPR), L-L     | 1200V                                                                                 | 1500<br>1500                                                     | 2500                                                             |
| Voltage Protection Rating (VPR), L-N     | 700V                                                                                  | 800<br>1000                                                      | 1500                                                             |
| Voltage Protection Rating (VPR), L-PE    | 700V                                                                                  | 700<br>1000                                                      | 1500                                                             |
| Voltage Protection Rating (VPR), N-PE    | 700V                                                                                  | 700<br>1000                                                      | 1500                                                             |
| Protection Modes                         | All modes protected                                                                   | All modes protected                                              | All modes protected                                              |
| Status Indication                        | 1 green LED per line<br>Audible alarm<br>Change-over contact (Form C dry), 240 VAC/2A | 1 green LED per line<br>Audible alarm<br>Flashing red status LED | 1 green LED per line<br>Audible alarm<br>Flashing red status LED |
| Remote Contact Switching Capacity        | 2 A @ 240 V                                                                           | 2.0 A @ 240 V                                                    | 2.0 A @ 240 V                                                    |
| Remote Contacts                          | Yes                                                                                   | Yes                                                              | Yes                                                              |
| Lead Length                              | 457mm                                                                                 | 457.2                                                            | 457.2                                                            |
| Lead Size                                | 3.31 mm <sup>2</sup>                                                                  | 3.31 Min                                                         | 3.31 Min                                                         |

Table 2/2

| Catalog Number     | SES160F120240SP            | SES160F120240D             | SES160F600Y                |
|--------------------|----------------------------|----------------------------|----------------------------|
| Temperature        | -40 to 85 °C               | -40 - 185                  | -40 - 185                  |
| Enclosure Material | Polycarbonate              | Polycarbonate              | Polycarbonate              |
| Enclosure Rating   | NEMA®-4X<br>UL® 50E Type 4 | NEMA®-4X<br>UL® 50E Type 4 | NEMA®-4X<br>UL® 50E Type 4 |
| Mounting           | 3/4" straight nipple       | 3/4" straight nipple       | 3/4" straight nipple       |
| Unit Weight        | 0.63 kg                    | 0.63 Min                   | 0.63 Min                   |

| Catalog Number        | SES160F120240SP                                                                                                                                        | SES160F120240D                                                                                                                                         | SES160F600Y                                                                                                                                            |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Certification Details | CSA C22.2 No. 269.2<br>UL® 1283 Edition 7<br>UL® 1449 Edition 5 Type 2,<br>20 kA Mode                                                                  | CSA C22.2 No. 269.2<br>UL® 1283 Edition 7<br>UL® 1449 Edition 5 Type 2,<br>20 kA Mode                                                                  | CSA C22.2 No. 269.2<br>UL® 1283 Edition 7<br>UL® 1449 Edition 5 Type 2,<br>20 kA Mode                                                                  |
| Complies With         | ANSI®/IEEE® C62.41.2-2002<br>Cat A, Cat B, Cat C<br>ANSI®/IEEE® C62.41.1-2002<br>Cat A, Cat B, Cat C<br>ANSI®/IEEE® C62.45-2002<br>Cat A, Cat B, Cat C | ANSI®/IEEE® C62.41.2-2002<br>Cat A, Cat B, Cat C<br>ANSI®/IEEE® C62.41.1-2002<br>Cat A, Cat B, Cat C<br>ANSI®/IEEE® C62.45-2002<br>Cat A, Cat B, Cat C | ANSI®/IEEE® C62.41.2-2002<br>Cat A, Cat B, Cat C<br>ANSI®/IEEE® C62.41.1-2002<br>Cat A, Cat B, Cat C<br>ANSI®/IEEE® C62.45-2002<br>Cat A, Cat B, Cat C |
| Depth (D)             | 77.7mm                                                                                                                                                 | 77.72mm                                                                                                                                                | 77.72mm                                                                                                                                                |
| Height (H)            | 69.9 mm                                                                                                                                                | 69.85                                                                                                                                                  | 69.85                                                                                                                                                  |
| Width (W)             | 202 mm                                                                                                                                                 | 201.93                                                                                                                                                 | 201.93                                                                                                                                                 |
| Certifications        | cUL, UL                                                                                                                                                |                                                                                                                                                        |                                                                                                                                                        |

## DIAGRAMS



## WARNING

nVent products shall be installed and used only as indicated in nVent's product instruction sheets and training materials. Instruction sheets are available at [www.nvent.com](http://www.nvent.com) and from your nVent customer service representative. Improper installation, misuse, misapplication or other failure to completely follow nVent's instructions and warnings may cause product malfunction, property damage, serious bodily injury and death and/or void your warranty.

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