

Specifications

Conditions of Sale

STANDARD: The seller's standard conditions of sale set forth in Price Sheet 150 apply.

SPECIAL TO THIS PRODUCT:

INCLUSIONS: The Fault Tamer Fuse Limiter consists of a mounting, backup limiter, and fuse tube.

EXCLUSIONS: Fault Tamer Fuse Limiters do not include fuse cartridges.

Fault Tamer Fuse Limiters for use in new installations do not include mounting brackets, which are available, as listed in Table 2 on page 2. Various connectors are also available as listed in Table 3 on page 2.

APPLICATION NOTE: Fault Tamer Fuse Limiters are ideally suited for single-phase transformers, for three-phase banks of single-phase transformers, and for three-phase transformers.

The Fault Tamer Fuse Limiter has been tested to and is in compliance with Spark Production Class A in Australian Standard AS 1033.1-1990. To be in compliance with Spark Production Class A, no sparks may be produced during a fault-clearing operation (an extremely significant reduction in fire hazard as compared to fuse cutouts).

The Fault Tamer Fuse Limiter should be selected to have a system maximum three-phase voltage rating equal to—or greater than—the system line-to-line voltage. To ensure proper coordination of a Fault Tamer Fuse Limiter with system surge arresters, it is also important that the system voltage is not too low relative to the Fault Tamer Fuse Limiter's system voltage class rating. To satisfy both of these requirements, the following specific system-voltage and minimum surge arrester recommendations should be observed:

| Fault Tamer System Voltage Class Rating kV, ANSI (IEC) | Applicable 60-Hz System Voltage, kV | Applicable 50-Hz System Voltage, kV | Minimum Surge Arrester Rating, kV |
|--|-------------------------------------|-------------------------------------|-----------------------------------|
| 15 (12) | 12 through 15 | 10 through 15 | 9 |
| 25 (24) | 22 through 29 | 20 through 26 | 18 |

★ Fault Tamer Fuse Limiter is manufactured in accordance with a quality system certified to ISO 9001:2000.

How to Order a Complete Fault Tamer Fuse Limiter—for New Installation

- STEP 1.** Obtain the catalog number of the desired Fault Tamer Fuse Limiter from Table 1 on page 2, taking care to match the system voltage class rating to that of your system.
- STEP 2.** Select the mounting bracket (if desired) and connector arrangement (if desired) from Table 2 on page 2, and add the indicated suffix letter(s) to the catalog number selected in Step 1. Fault Tamer Fuse Limiters ordered without connector suffix will be assembled with 3/8–16-inch bolt and nut, no connector.
- STEP 3.** Obtain the catalog number of the desired Fault Tamer Fuse Cartridge from Table 6 on page 5.●

How to Order a Complete Fault Tamer Fuse Limiter—for Retrofit into Existing Cutout Mountings

Note: Fault Tamer Fuse Limiters are designed to fit into *all vintages* of Type XS Fuse Cutout Mountings.

- STEP 1.** Obtain the catalog number of the desired Fault Tamer Backup Limiter from Table 4 on page 3, taking care to match the system voltage class rating of the limiter to that of your system.
- STEP 2.** Also, from Table 4 on page 3, obtain the catalog number of the desired Fault Tamer Fuse Tube, taking care to match the system voltage class rating of the fuse tube to that of your system.
- STEP 3.** Obtain the catalog number of the desired Fault Tamer Fuse Cartridge from Table 6 on page 5.●

Note: Fault Tamer Backup Limiters and Fault Tamer Fuse Tubes can be purchased in a combined package, if so desired. Refer to Table 4 on page 4. Obtain the catalog number of the desired combined package, taking care to match the system voltage class rating of the package to that of your system.

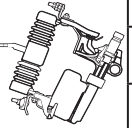
● Fault Tamer Fuse Cartridges are sold in packs of five, or over packs of 25. Minimum ordering quantity is five.

How to Order Handling Tools

Obtain the catalog number of the recommended handling tool(s) from Table 7 on page 5. Refer to Specification Bulletin 851-31.



Table 1. Fault Tamer Fuse Limiter—For New Installations. Includes Mounting, Backup Limiter^①, and Fuse Tube (Less Mounting Bracket, Connectors, and Fault Tamer Fuse Cartridge)

| Illustration | Ratings | | | | | | | | Leakage Distance to Ground Minimum, Inches (mm) | | Catalog Number | | Page Reference for Dimensional Information |
|---|--------------------------|------------------|--------------------------|------------------|------|--------------|-----|---------------|---|-----------|---------------------|-------------------|--|
| | Voltage, kV | | | | | Amperes, RMS | | | | | Porcelain Insulator | Polymer Insulator | |
| | System Class, ANSI (IEC) | System Maximum | | | | BIL | Max | Interr., Sym. | Porcelain | Polymer | | | |
| | | 60 Hz | | 50 Hz | | | | | | | | | |
| | Three-Phase ^② | Phase-to-Neutral | Three-Phase ^② | Phase-to-Neutral | | | | | | | | | |
|  | 15 (12) | 15 | 8.7 | 15 | 8.7 | 110 | 20 | 12 000 | 8½ (216) | 14¾ (375) | 98021 | 98021-P | 6 |
| | 15 (12) | 15 | 8.7 | 15 | 8.7 | 125 | 20 | 12 000 | 11 (279) | — | 98072● | — | 6 |
| | 15 (12) | 15 | 8.7 | 15 | 8.7 | 150 | 20 | 12 000 | 17 (432) | 26½ (673) | 98073■ | 98073-P△ | 6 |
| | 25 (24) | 29 | 16.8 | 26 | 15.1 | 125 | 20 | 12 000 | 11 (279) | — | 98022 | — | 7 |
| | 25 (24) | 29 | 16.8 | 26 | 15.1 | 150 | 20 | 12 000 | 17 (432) | 26½ (673) | 98052 | 98052-P | 7 |
| | 25 (24) | 29 | 16.8 | 26 | 15.1 | 150 | 20 | 12 000 | 26 (660) | 37½ (953) | 98053▲◆ | 98053-P▼ | 8 |
| | 22/38 (20.8/36) | — | 22 | — | 20.8 | 150 | 20 | 12 000 | 17 (432) | 26½ (673) | 98044□ | 98044-P□ | 7 |

① TCC No. 450-8.

② Also applies to phase-to-phase applications. Applications involving single-phase transformers connected phase to phase as well as three-phase applications require the use of a Fault Tamer in each lead.

● Includes extension adapter for use in mounting with porcelain insulator having 11-inch (279-mm) leakage distance to ground.

■ Includes extension adapter for use in mounting with porcelain insulator having 17-inch (432-mm) leakage distance to ground.

▲ Meets 170-kV BIL rating requirement of IEC Publication 60282-2.

◆ Includes an extension adapter for use in mounting with a porcelain insulator having a 26-inch (660-mm) leakage distance to ground.

▼ Includes extension adapter for use in mounting with polymer insulator having 37½-inch (953-mm) leakage distance to ground.

□ Applicable only for protection of single-phase transformers in solidly grounded-neutral (multi-grounded-neutral) 34.5-kV systems. Uses 29-kV, 150-kV BIL mounting.

△ Includes extension adapter for use in mounting with polymer insulator having 26½-inch (673 mm) leakage distance to ground.

Table 2. Mounting Brackets and Other Options

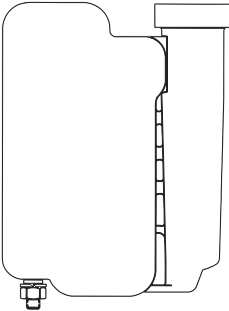
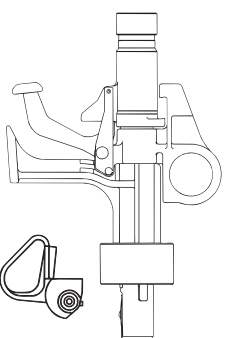
| Item | Add Catalog Number Suffix |
|---|---------------------------|
| S&C extended mounting bracket, for crossarm, pole, or wall mounting of Fault Tamer Fuse Limiter mountings | -B |
| NEMA Type B mounting bracket, for crossarm mounting of Fault Tamer Fuse Limiter mountings | -C |
| Harsh Environment design—all galvanized steel components and hardware replaced with stainless steel to provide enhanced corrosion resistance in a coastal or high-contamination environment | -S |

Table 3. Connector Options^①

| Item | Accommodating Conductors | | Position | Add Catalog Number Suffix |
|----------------------------|--------------------------|--|----------------------|---------------------------|
| | Quantity | Size and Material | | |
| Parallel-groove connectors | Two Conductors | No. 6 solid (13.3 mm ²) through No. 2 stranded (44.4 mm ²) copper or aluminum in one groove; No. 2 solid (33.6 mm ²) through 250 kc mil (168 mm ²) stranded copper or aluminum or 4/0 ACSR (161 mm ²) in the other groove (one-piece design) | Standard orientation | -D |
| | Two Conductors | No. 6 solid (13.3 mm ²) through No. 2 stranded (44.4 mm ²) copper or aluminum in one groove; No. 2 solid (33.6 mm ²) through 250 kc mil (168 mm ²) stranded copper or aluminum or 4/0 ACSR (161 mm ²) in the other groove (two-piece design) | Standard orientation | -D2 |
| Eye-bolt connectors | One Conductor | No. 8 solid (8.4 mm ²) through 250 kc mil (168 mm ²) stranded copper or aluminum or 4/0 ACSR (161 mm ²) | Standard orientation | -M |

① Connectors for Fault Tamer Fuse Limiters cannot be sold separately.

Table 4. Fault Tamer Components

| Illustration | Item | For use with Type XS Fuse Cutouts and Fault Tamer Fuse Limiter Basic Catalog Numbers | Voltage, kV | | | | Catalog Number | |
|--|---|---|--------------------------|--------------------------|------------------|--------------------------|----------------|------------------|
| | | | System Class, ANSI (IEC) | System Maximum | | | | |
| | | | | 60 Hz | | 50 Hz | | |
| | | | | Three-Phase ^① | Phase-to-Neutral | Three-Phase ^① | | Phase-to-Neutral |
|  | Backup limiter ^② | 89021, 89031, 89071, 89221, 89022●, 89032●, 89042●, 89052●, 89072●, 89092●, 89222●, 98021, 98052●, 98072●, 98073● | 15 (12) | 15 | 8.7 | 15 | 8.7 | 98251 |
| | | 89022, 89032, 89042, 89052, 89072, 89092, 89222, 89033■, 89223■, 98022, 98052 | 25 (24) | 29 | 16.8 | 26 | 15.1 | 98252 |
| | | 89053■, 89253■, 98053■ | 25 (24) | 29 | 16.8 | 26 | 15.1 | 98253 |
| | | 89042, 89052, 89033, 89053, 89223, 89253, 98044, 98054 | 38 (36) | 38 | 21.9 | 36 | 20.8 | 98254 |
|  | Fuse tube ^③ | 89021, 89031, 89071, 89221, 98021 | 15 (12) | 15 | 8.7 | 15 | 8.7 | 98521 |
| | Fuse tube including extension adapter ^{③④} | 89022, 89032, 89042, 89052, 89072, 89092, 89222, 98052, 98072, 98073 | 15 (12) | 15 | 8.7 | 15 | 8.7 | 98572 |
| | Fuse tube ^③ | 9022, 89032, 89042, 89052, 89072, 89092, 89222, 98022, 98052 | 25 (24) | 29 | 16.8 | 26 | 15.1 | 98522 |
| | Fuse tube including extension adapter ^{③⑤} | 89033, 89053, 89223, 89253, 98053 | 25 (24) | 29 | 16.8 | 26 | 15.1 | 98553 |
| | Fuse tube ^③ | 89042, 89052, 98044 | 22/38 (20.8/36) | — | 22 | — | 20.8 | 98544 |

① Also applies to phase-to-phase applications. Applications involving single-phase transformers connected phase-to-phase, as well as three-phase applications require the use of a Fault Tamer in each lead.

② TCC No. 450-8.

③ Includes trunnion.

④ Can only be used on 50-Hz systems rated 10 kV through 15 kV and on 60-Hz systems rated 12 kV through 15 kV.

⑤ Can only be used on 50-Hz systems rated 20 kV through 26 kV and on 60-Hz systems rated 22 kV through 29 kV.

● Requires use of fuse tube with extension adapter, catalog number 98572.

■ Requires use of fuse tube with extension adapter, catalog number 98553.

TABLE CONTINUED ►

Table 4. Fault Tamer Components—Continued

| Basic Catalog Number | Item | For use with Type XS Fuse Cutouts and Fault Tamer Fuse Limiter Basic Catalog Numbers | Voltage, kV | | | | Catalog Number | |
|--|--|--|--------------------------|--------------------------|------------------|--------------------------|----------------|------------------|
| | | | System Class, ANSI (IEC) | System Maximum | | | | |
| | | | | 60 Hz | | 50 Hz | | |
| | | | | Three-Phase ^① | Phase-to-Neutral | Three-Phase ^① | | Phase-to-Neutral |
| Backup Limiter and Fuse Tube Combined Package | | | | | | | | |
| 98251 and 98521 | Backup limiter ^② and fuse tube ^③ | 89021, 89031, 89071, 89221, 98021 | 15 (12) | 15 | 8.7 | 15 | 8.7 | 98721 |
| 98251 and 98572 | Backup limiter ^② and fuse tube, including extension adapter ^{③④} | 89022, 89032, 89042, 89052, 89072, 89092, 89222, 98052, 98072, 98073 | 15 (12) | 15 | 8.7 | 15 | 8.7 | 98772 |
| 98252 and 98522 | Backup limiter ^② and fuse tube ^③ | 89022, 89032, 89042, 89052, 89072, 89092, 89222, 98022, 98052 | 25 (24) | 29 | 16.8 | 26 | 15.1 | 98722 |
| 98252 and 98553 | Backup limiter ^② and fuse tube, including extension adapter ^{③⑤} | 89033, 89223, 89053, 89253, 98053 | 25 (24) | 29 | 16.8 | 26 | 15.1 | 98753 |
| 98254 and 98544 | Backup limiter ^② and fuse tube ^③ | 89022, 89032, 89042, 89052, 89072, 89092, 89222, 98022, 98052, 98044 | 22/38 (20.8/36) | — | 22 | — | 20.8 | 98744 |

① Also applies to phase-to-phase applications. Applications involving single-phase transformers connected phase-to-phase, as well as three-phase applications require the use of a Fault Tamer Fuse Limiter in each lead.

② TCC No. 450-8.

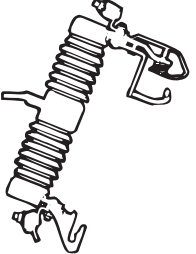
③ Includes trunnion.

④ Can *only* be used on 50-Hz systems rated 10 kV through 15 kV and on 60-Hz systems rated 12 kV through 15 kV.

⑤ Can *only* be used on 50-Hz systems rated 20 kV through 26 kV and on 60-Hz systems rated 22 kV through 29 kV.

TABLE CONTINUED ►

Table 4. Fault Tamer Components—Continued

| Illustration | Item | Basic Catalog Number | Voltage Rating, kV | | Leakage Distance to Ground Minimum, Inches (mm) | | Catalog Number ^① | |
|---|--|--|-----------------------------|-----|---|-----------|-----------------------------|-------------------|
| | | | System Class, ANSI (IEC) | BIL | Porcelain | Polymer | Porcelain Insulator | Polymer Insulator |
| | | | | | | | | |
|  | Overhead—pole-top cutout, less fuse tube | 89021, 89031, 89071, 89221, 98021 | 15 (12) | 110 | 8½ (216) | 14¾ (375) | 89811R10 | 89811R10-P |
| | | 89022, 89032, 89072, 89222, 98022, 98072 | 15, 25 (12), (24) | 125 | 11 (279) | — | 89812R10 | — |
| | | 89042, 89052, 89092, 98052, 98072, 98073 | 15, 25 (12), (24) | 150 | 17 (432) | 26½ (673) | 89802R10 | 89802R10-P |
| | | 89053, 89253, 98053 | 15, 25, 38 (12), (24), (36) | 150 | 26 (660) | 37½ (953) | 89823R10● | 89823R10-P |

① Specify mounting bracket, if desired, and connector option (required) by adding suffix letter(s) to catalog number. For example, 89811R10-BD. See Tables 2 and 3 on page 2.


● Meets 170-kV BIL rating requirement of IEC Publication 60282-2.

Table 5. Other Options

| Item | Add Catalog Number Suffix |
|---|---------------------------|
| High-visibility label on insulator ^① | -L1 |

① Not available on polymer insulators.

Table 6. Fault Tamer Fuse Cartridge (TCC Number 450-8) ■

| Illustration | Ratings, Amperes | Catalog Number |
|---|------------------|----------------|
|  | 3 | 526003 |
| | 5 | 526005 |
| | 7 | 526007 |
| | 10 | 526010 |
| | 15 | 526015 |
| | 20 | 526020 |

■ Fault Tamer Fuse Cartridges are sold in packs of five, or over packs of 25. Minimum ordering quantity is five.

Table 7. Recommended Fuse Handling Tools—For Use With Fault Tamer Fuse Limiters

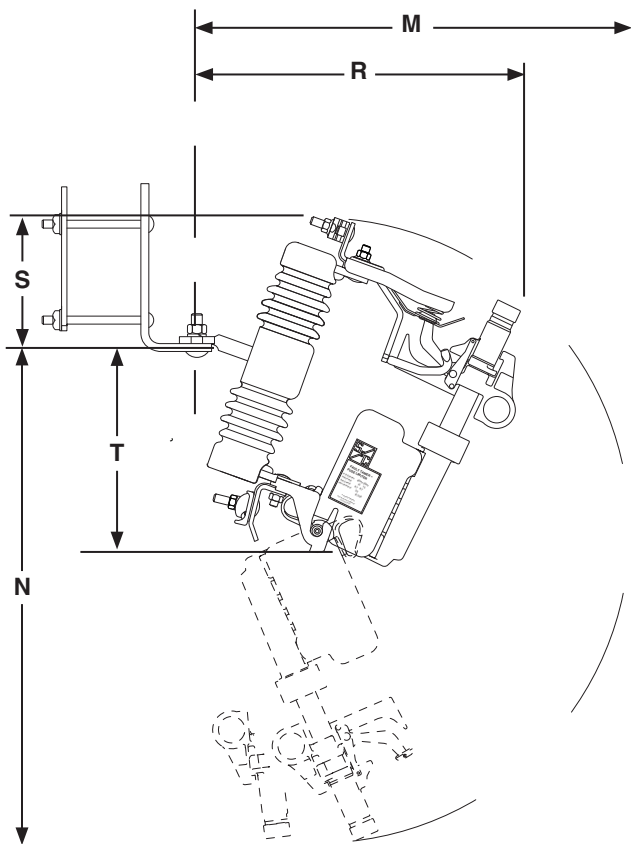
| Item | Catalog Number |
|---|----------------|
| Talon™ Handling Tool, for use on overhead distribution systems to securely install and remove distribution fuses from their mountings | 4440 |
| Universal Pole | ▲ |

▲ Select to match height of installation. Refer to Specification Bulletin 851-31.

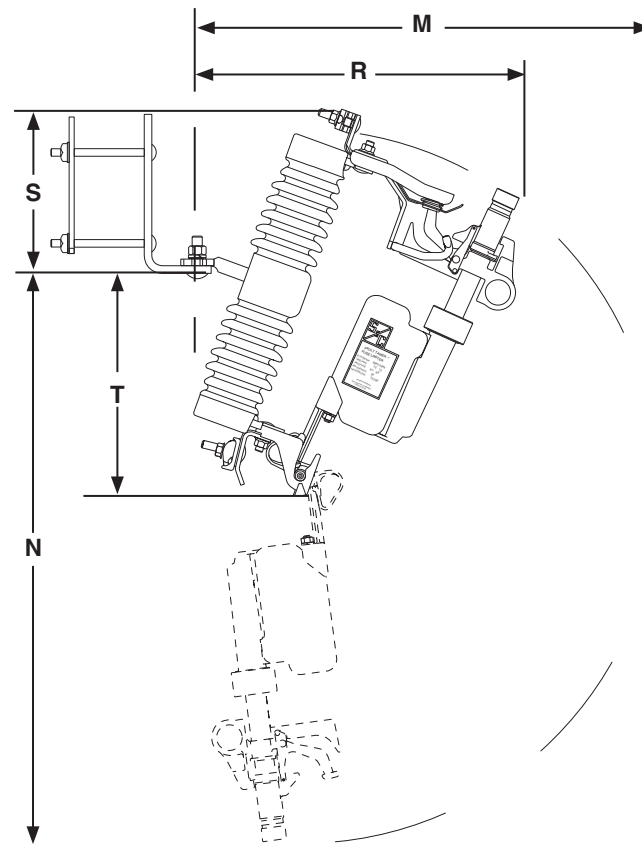
Fault Tamer[®] FuseLimiter

Catalog Numbers 98021, 98073

Dimensions in inches (mm)



Catalog number 98021



Catalog numbers 98072 and 98073

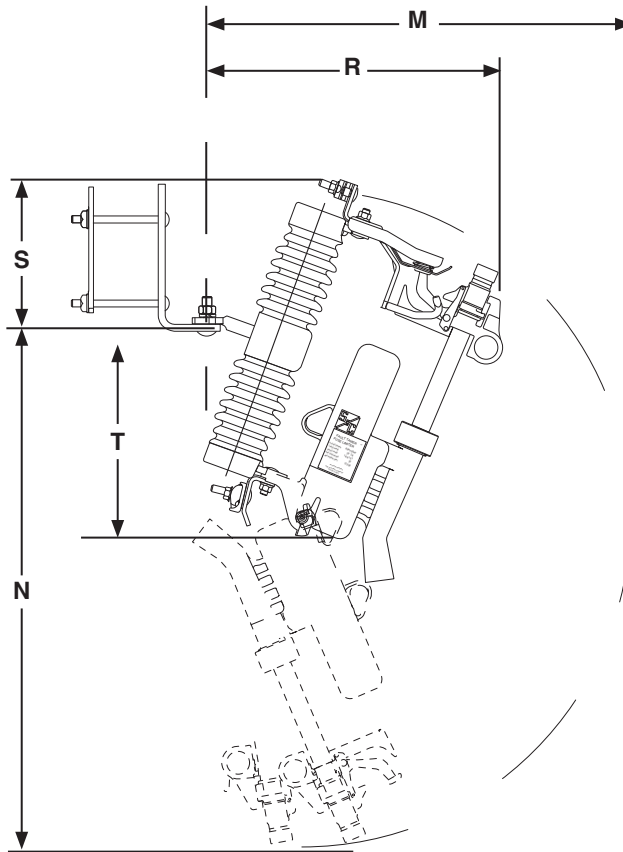
| Rating | | | | Catalog Number (Less Mounting Bracket and Connectors) ^① | | Dimensions in Inches (mm) | | | | | Net Wt., Lbs. (Kg.) |
|--|------------|---------|-----------------|---|----------------------|--------------------------------------|--------------------------------------|--------------------------------------|-------------------------------------|--------------------------------------|--------------------------------------|
| System Voltage Class, kV, ANSI (IEC) | BIL, kV | Amperes | | Porcelain Insulator | Polymer Insulator | M | N | R | S ^② | T | |
| | | Max | Interr., Sym | | | | | | | | |
| 15 (12) | 110 | 20 | 12 000 | 98021 | — | 20 ¹ / ₄ (514) | 23 ³ / ₈ (594) | 15 ¹ / ₈ (384) | 6 (152) | 9 ³ / ₄ (248) | 15 ¹ / ₄ (6.9) |
| 15 (12) | 110 | 20 | 12 000 | — | 98021-P | 20 ¹ / ₄ (514) | 23 ³ / ₈ (594) | 15 ¹ / ₈ (384) | 6 (152) | 9 ³ / ₄ (248) | 10 ³ / ₄ (4.9) |
| 15 (12) | 125 | 20 | 12 000 | 98072 | — | 23 (584) | 28 ³ / ₈ (721) | 15 ¹ / ₈ (391) | 7 ³ / ₄ (197) | 11 ³ / ₈ (289) | 16 ³ / ₄ (7.6) |
| 15 (12) | 150 | 20 | 12 000 | 98073 | 98073-P | 23 (584) | 28 ³ / ₈ (721) | 15 ¹ / ₈ (391) | 7 ³ / ₄ (197) | 11 ³ / ₈ (289) | 16 ³ / ₄ (7.6) |

^① Specify mounting bracket, if desired, and connector option (required) by adding suffix letter(s) to catalog number. For example, 98021-CD. See Table 2 on page 2.

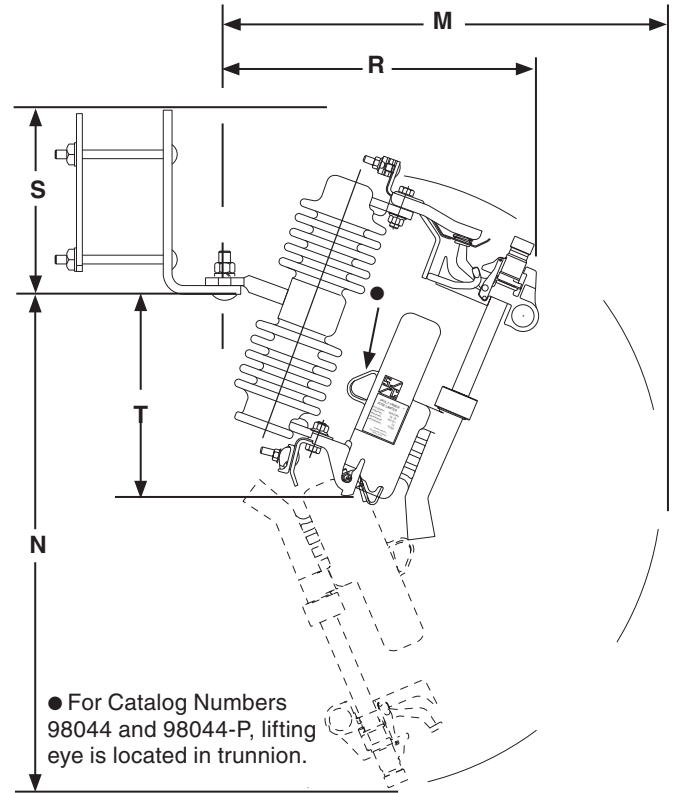
^② Dimension applies to Fault Tamer furnished with optional parallel-groove connectors (catalog number suffix "-D"). If Fault Tamer is furnished with optional eye-bolt connectors (catalog number suffix "-M"), dimension is slightly smaller.

Catalog Numbers 98022, 98052, and 98044

Dimensions in inches (mm)



Catalog number 98022



Catalog numbers 98052 and 98044

| Rating | | | | Catalog Number (Less Mounting Bracket and Connectors) ^① | | Dimensions in Inches (mm) | | | | | Net Wt., Lbs. (Kg.) |
|--|------------|---------|-----------------|---|----------------------|---------------------------|-----------|-----------|----------------|-----------|------------------------|
| System Voltage Class, kV, ANSI (IEC) | BIL, kV | Amperes | | Porcelain Insulator | Polymer Insulator | M | N | R | S ^② | T | |
| | | Max | Interr., Sym | | | | | | | | |
| 25 (24) | 125 | 20 | 12 000 | 98022 | — | 22½ (572) | 27¾ (705) | 15½ (394) | 7¾ (197) | 11⅞ (289) | 17½ (7.9) |
| 25 (24) | 150 | 20 | 12 000 | 98052 | — | 22½ (572) | 27¾ (705) | 15½ (394) | 7¾ (197) | 11⅞ (289) | 22½ (10.2) |
| 25 (24) | 150 | 20 | 12 000 | — | 98052-P | 22½ (572) | 27¾ (705) | 15½ (394) | 7¾ (197) | 11⅞ (289) | 12 (5.4) |
| 22/38 (20.8/36) | 150 | 20 | 12 000 | 98044● | — | 22½ (572) | 27¾ (705) | 15½ (394) | 7¾ (197) | 11⅞ (289) | 22½ (10.2) |
| 22/38 (20.8/36) | 150 | 20 | 12 000 | — | 98044-P● | 22½ (572) | 27¾ (705) | 15½ (394) | 7¾ (197) | 11⅞ (289) | 12 (5.4) |

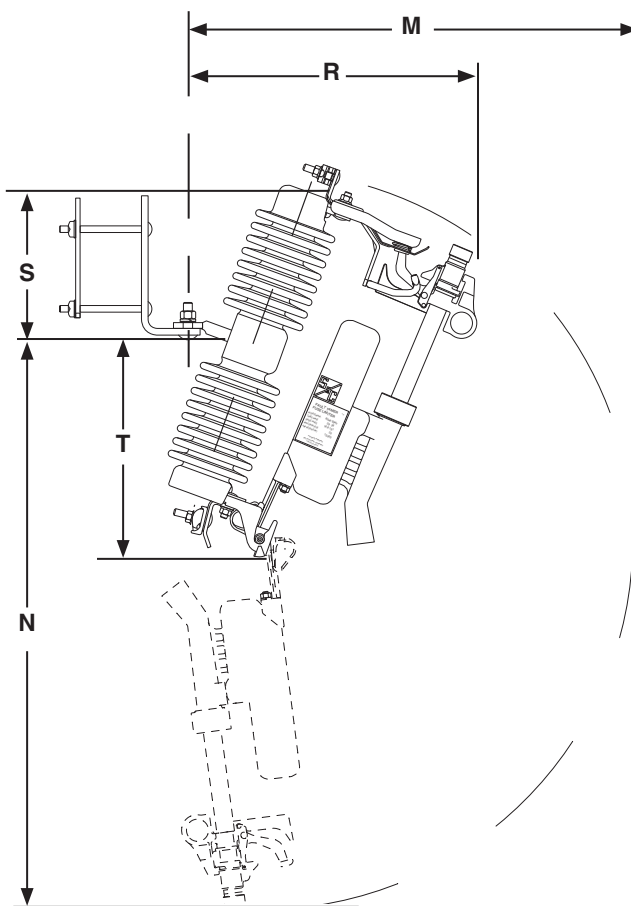
① Specify mounting bracket, if desired, and connector option (required) by adding suffix letter(s) to catalog number. For example, 98021-CD. See Table 2 on page 2.

② Dimension applies to Fault Tamer furnished with optional parallel-groove connectors (catalog number suffix "-D"). If Fault Tamer is furnished with optional eye-bolt connectors (catalog number suffix "-M"), dimension is slightly smaller.

● Applicable only for protection of single-phase transformers in solidly grounded-neutral (multi-grounded-neutral) 34.5-kV systems. Uses 29-kV, 150-kV BIL mounting.

Catalog Number 98053

Dimensions in inches (mm)



Catalog number 98053

| Rating | | | | Catalog Number (Less Mounting Bracket and Connectors) ^① | | Dimensions in Inches (mm) | | | | | Net Wt., Lbs. (Kg.) |
|--------------------------------------|---------|---------|--------------|---|-------------------|---------------------------|--------------------------------------|--------------------------------------|-------------------------------------|----------|---------------------------|
| System Voltage Class, kV, ANSI (IEC) | BIL, kV | Amperes | | Porcelain Insulator | Polymer Insulator | M | N | R | S ^② | T | |
| | | Max | Interr., Sym | | | | | | | | |
| 25 (24) | 150● | 20 | 12 000 | 98053 | — | 25 (635) | 32 ⁷ / ₈ (835) | 16 ¹ / ₈ (410) | 9 ¹ / ₄ (235) | 13 (330) | 25 (11.3) |
| 25 (24) | 150 | 20 | 12 000 | — | 98053-P | 25 (635) | 32 ⁷ / ₈ (835) | 16 ¹ / ₈ (410) | 9 ¹ / ₄ (235) | 13 (330) | 14 (6.4) |

^① Specify mounting bracket, if desired, and connector option (required) by adding suffix letter(s) to catalog number. For example, 98021-CD. See Table 2 on page 2.

^② Dimension applies to Fault Tamer furnished with optional parallel-groove connectors (catalog number suffix "-D"). If Fault Tamer is furnished with optional eye-bolt connectors (catalog number suffix "-M"), dimension is slightly smaller.

● Meets 170-kV BIL rating requirements of IEC Publication 282-2.