# **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 3. Various connectors are also available as listed in Table 3 on page 3.

**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 systemvoltage and minimum surge arrester recommendations should be observed:

Fault Tamer System Voltage Class Rating kV, ANSI (IEC)Applicable 60-Hz System Voltage, kV15 (12)12 through 15		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		

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

Complete the following steps for a complete Fault Tamer Fuse Limiter order:

#### For a new installation:

**STEP 1.** Obtain the catalog number of the desired Fault Tamer Fuse Limiter from Table 1 on page 3, taking care to match the system voltage class rating to that of your system.

			_	
Catalog Number:				

**STEP 2.** Select the mounting bracket (if desired) and connector arrangement (if desired) from Table 2 on page 3 and Table 3 on page 3, 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 a %-16-inch bolt and nut, no connector.

Suffixes:

**STEP 3.** Obtain the catalog number of the desired Fault Tamer fuse cartridge from Table 6 on page 6.

					1 11
Cataloa Number					

**Example:** The catalog number for a new-installation Fault Tamer Fuse Limiter rated 15 kV nominal, 110 BIL, with a polymer insulator, including an S&C Extended

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



September 23, 2024 © S&C Electric Company 1995–2024, all rights reserved Mounting Bracket, for crossarm, pole, or wall mounting of Fault Tamer Fuse Limiter mountings and parallel-groove connectors to accommodate No. 6 solid (13.3 mm<sup>2</sup>) through No. 2 stranded (44.4 mm2) copper or aluminum in one groove, No. 2 solid (33.6 mm<sup>2</sup>) through 250 kc mil (168 mm<sup>2</sup>) stranded copper or aluminum or 4/0 ACSR (161 mm<sup>2</sup>) in the other groove (two-piece design), and with a 5-Ampere Fault Tamer fuse cartridge (TCC Number 450-8) is:

FT Catalog. Number:	98021-P-B-D2
5 Ampere Cartridge:	526005

#### 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 4, making sure to match the systemvoltage class rating of the limiter to that of the system.

Catalog Number:			

**STEP 2.** From Table 4 on page 4, obtain the catalog number of the desired Fault Tamer fuse tube, making sure to match the system-voltage class rating of the fuse tube to that of the system.

Cataloa Number		 	

**STEP 3.** Obtain the catalog number of the desired Fault Tamer fuse cartridge from Table 6 on page 6.

Catalog Number:							
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**Note:** Fault Tamer backup limiters and Fault Tamer fuse tubes can be purchased in a combined package, if desired. Refer to Table 4 on page 5. Obtain the catalog number of the desired combined package, making sure to match the system-voltage class rating of the package to that of the system. **Example:** The catalog number for a Fault Tamer Fuse Limiter backup limiter, for retrofit into existing cutout mountings, rated 25 kV nominal, 150 kV BIL, compatible with fuse cartridge (TCC Number 450-8) as a singular component, is:

FT Backup Limiter Catalog Number: 98252

The catalog number for a Fault Tamer Fuse Limiter fuse tube, for retrofit into existing cutout mountings, rated 25 kV nominal, 150 kV BIL, compatible with (TCC Number 450-8) fuse cartridges as a singular component, including a trunnion, is:



**Note:** If this same backup limiter and fuse tube are ordered as a package, the catalog number for the combination, and with a 5-Ampere Fault Tamer fuse cartridge (TCC Number 450-8) is:

FT Backup Limiter and Fuse Tube Combined Package Catalog Number:

FT 5 Ampere Cartridge:	5	][	<b>2</b>		6	][	0	][	0		5	
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### How to Order Handling Tools

Obtain the catalog number of the recommended handling tool(s) from Table 7 on page 6. Refer to Specification Bulletin 851-31.



**Example:** The catalog number for a Talon Handling Tool fitting, to be attached to an existing S&C Universal Pole, is:



For a new S&C Universal Pole, 20 feet (610 cm) in length, the catalog number per Specification Bulletin 851-31 is:

Catalog Number: 4479R2-E

• Fault Tamer fuse cartridges are sold in packs of five, or over packs of 25. Minimum ordering quantity is five.

				Ratings	6				Leakage	Number			
			Voltage	, kV				peres, MS	to Ground Minimum, Inches (mm)				Page
Illustration			System I	Maximum						,	Porcelain	Polymer	Reference for
	System Class,	60	Hz	50	Hz			Interr.,	Porce-		Insulator	Insulator	Dimensional
	ANSI (IEC)	Three- Phase ②	Phase- to- Neutral	Three- Phase ②	Phase- to-Neu- tral	BIL	Max	Sym.	lain	Polymer			Information
	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

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

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 threephase applications require the use of a Fault Tamer Fuse Limiter 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.

## Table 2. Mounting Brackets and Other Options

▲ Includes extension adapter for use in mounting with polymer insulator having a 26½-inch (673-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.

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

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

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

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

		For use with Type XS							
		Fuse Cutouts and	System		Catalog				
Illustration	Item	Fault Tamer Fuse Limiter Basic	Class,	60	) Hz	50 Hz		Number	
		Catalog Numbers	ANSI (IEC)	Three Phase①	Phase to Neutral	Three Phase①	Phase to Neutral		
		89021, 89031, 89071, 89221, 890220, 890320, 890420, 890520, 890720, 890920, 892220, 98021, 980520, 980720, 980730	15 (12)	15	8.7	15	8.7	98251	
	Backup limiter(2)	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	
	Fuse tube③	89021, 89031, 89071, 89221, 98021	15 (12)	15	8.7	15	8.7	98521	
	Fuse tube including extension adapter(3)(4)	89022, 89032, 89042, 89052, 89072, 89092, 89222, 98052, 98072, 98073	15 (12)	15	8.7	15	8.7	98572	
	Fuse tube③	9022, 89032, 89042, 89052, 89072, 89092, 89222, 98022, 98052	25 (24)	29	16.8	26	15.1	98522	
	Fuse tube including extension adapter(3)(5)	89033, 89053, 89223, 89253, 98053	25 (24)	29	16.8	26	15.1	98553	

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.

TCC No. 450-8.

Includes trunnion.

 $\circledast\,$  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.

(s) 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 ►

		For use with Type XS								
Desis Ostalas		Fuse Cutouts and	System			Catalan				
Basic Catalog Number	Item	Fault Tamer Fuse Limiter Basic	Class,	60 Hz		50	Hz	Catalog Number		
		Catalog Numbers	ANSI (IEC)	Three Phase①	Phase to Neutral	Three Phase①	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(3)(4)	89022, 89032, 89042, 89052, 89072, 89092, 89222, 98052, 98072, 98073	15 (12)	15	8.7	15	8.7	98772		
98252 and 98522	Backup limiter② and fuse tube③	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(3)(5)	89033, 89223, 89053, 89253, 98053	25 (24)	29	16.8	26	15.1	98753		

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.

TCC No. 450-8.

Includes trunnion.

3 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.

(s) 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 ►

			Voltage Rati	ng, kV	Leakage Di		Catalog Number①		
Illustrations	Item	Basic Catalog Number	System		Ground Minim (mm	,	Porcelain	Polymer	
		Number	Class, ANSI (IEC)	BIL	Porcelain	Polymer	Insulator	Insulator	
Strand State	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	

 Specify mounting bracket, if desired, and connector option (required) by adding suffix letter(s) to catalog number. For example, 89811R10-BD. See Table 2 on page 3. • Meets 170-kV BIL rating requirement of IEC Publication 60282-2.

Catalog Number

526003

526005

526007

526010

526015

526020

#### 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 Limiter Cartridge (TCC Number 450-8) (1)



① Fault Tamer Fuse Limiter cartridges are sold only in single packs of five or as five combined packs totaling 25 cartridges. Minimum ordering quantity is five.

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

Item	Catalog Number
Talon <sup>™</sup> 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.

## Catalog Numbers 98021, 98073



Dimensions in inches (mm)

Catalog number 98021

Catalog numbers 98072 and 98073

		(Less M	Number ounting d Connec- s)①		Net Wt.,								
System Voltage	System Voltage		Amperes		peres	Porcelain	Polymer						Lbs. (kg)
Class, kV, BIL, k ANSI (IEC)	BIL, kV	Мах	Interr., Sym	Insulator	Insulator	М	N	R	<b>S</b> ②	Т			
15 (12)	110	20	12 000	98021	—	20¼ (514)	23% (594)	151⁄8 (384)	6 (152)	9¾ (248)	15¼ (6.9)		
15 (12)	110	20	12 000	—	98021-P	20¼ (514)	23% (594)	151⁄8 (384)	6 (152)	9¾ (248)	10¾ (4.9)		
15 (12)	125	20	12 000	98072	_	23 (584)	28% (721)	15¾ (391)	7¾ (197)	11% (289)	16¾ (7.6)		
15 (12)	150	20	12 000	98073	98073-P	23 (584)	28% (721)	15% (391)	7¾ (197)	11% (289)	16¾ (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 3.

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

## Catalog Numbers 98022 and 98052



Catalog number 98022

Catalog number 98052

Rating Catalog Nu (Less Mou Bracket and tors)					ounting d Connec-		Net Wt.,				
System Voltage	System Voltage Am		peres	Porcelain Pol	Polymer						Lbs. (kg)
Class, kV, ANSI (IEC)	BIL, kV	Мах	Interr., Sym	Insulator	Insulator	М	N	R	S②	Т	
25 (24)	125	20	12 000	98022	—	22½ (572)	27¾ (705)	15½ (394)	7¾ (197)	11¾ (289)	17½ (7.9)
25 (24)	150	20	12 000	98052	_	22½ (572)	27¾ (705)	15½ (394)	7¾ (197)	11% (289)	221⁄2 (10.2)
25 (24)	150	20	12 000	_	98052-P	22½ (572)	27¾ (705)	15½ (394)	7¾ (197)	11% (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 3.

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

## Catalog Number 98053



Dimensions in inches (mm)

#### Catalog number 98053

Rating Catalog Number (Less Mounting Bracket and Connec- tors)①					Dimensions in Inches (mm)					Net Wt., Lbs.	
System Voltage Class, kV, ANSI (IEC)	BIL, kV	Am Max	peres Interr., Sym	Porcelain Polymer Insulator Insulator		М	N	R	SQ	т	(kg)
25 (24)	150●	20	12 000	98053		25 (635)	327/8 (835)	161⁄8 (410)	9¼ (235)	13 (330)	25 (11.3)
25 (24)	150	20	12 000	—	98053-P	25 (635)	327⁄8 (835)	161⁄8 (410)	9¼ (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 3.

(2) Dimension applies to a Fault Tamer Fuse Limiter furnished with optional parallel-groove connectors (catalog number suffix "-D"). If a Fault Tamer Fuse Limiter 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.