

The Trans-Guard™ SX full-range current-limiting fuse provides both overload and fault current protection for distribution equipment in a single fuse body. As a full-range fuse, it is capable of interrupting any continuous current between the minimum current that can cause melting of its elements and its rated maximum interrupting current (50,000 amps). The fuses are capable of interrupting in elevated ambient temperatures up to their rated maximum

application temperature, which is 140°C and 71°C for the 2.2 inch and 3.3 inch diameter designs, respectively. The Trans-Guard™ SX fuse is hermetically sealed and thus discharges no gasses during fuse operation. An additional design distinction is its Patented Damage Sensor that significantly reduces the potential for fuse failure in the event of element damaging current surges.



SX Full-Range
CL Fuses

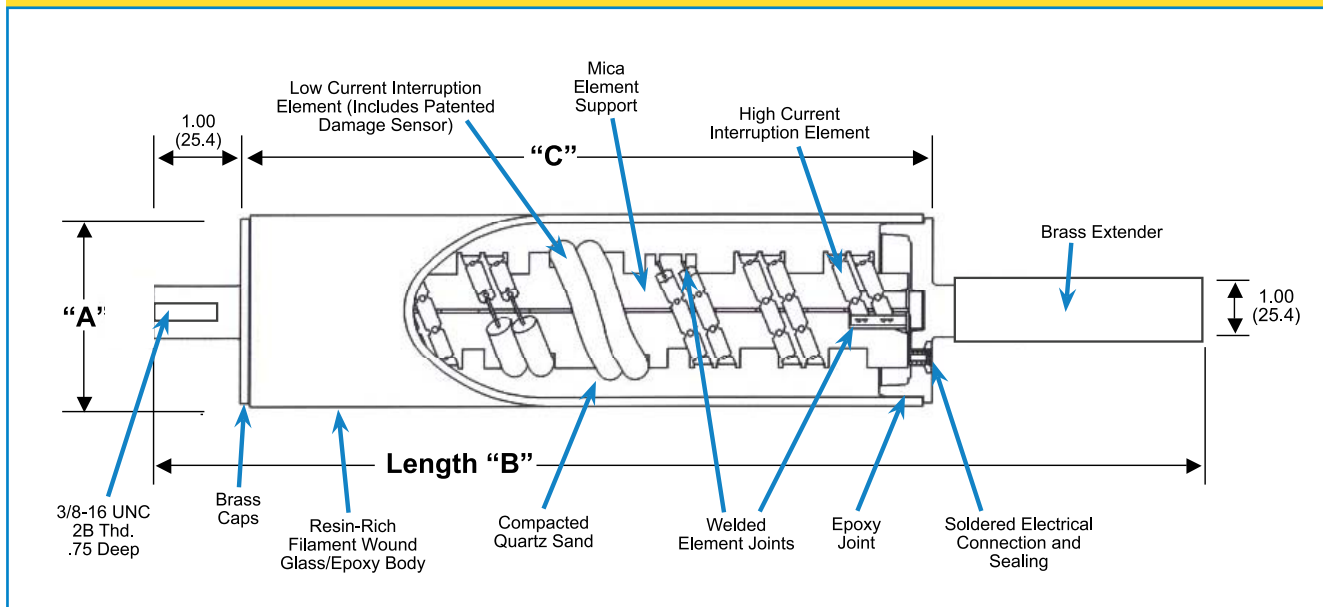
Application:

Trans-Guard™ SX fuses are specifically designed to be installed in “wet-well” fuse holders for oil-filled padmounted switchgear and transformer applications (only 2.2 inch diameter designs are suitable for wet-well fuses holders mounted directly in transformers).

! **CAUTION:** Trans-Guard™ SX fuses are **NOT** designed for any type of live switching operation.

| FEATURE | BENEFIT/DESCRIPTION |
|---|---|
| Patented Damage Sensor | Designed to significantly reduce the risk of fuse failure should the fuse be subjected to an element damaging current surge |
| Hermetically sealed construction | Ensures that no gasses escape from the fuse during current interruption. All Trans-Guard™ SX fuses are helium mass spectrometer leak tested to ensure sealing system integrity |
| Rugged machined brass end caps | Used for greater ferrule strength resulting in less distortion and more secure fuse attachment in wet-well fuse holders |
| Tested in accordance with the most recent ANSI/IEEE standards | Includes requirements for short circuit testing at the manufacturer's specified rated maximum application temperature (140°C and 71°C for 2.2 inch and 3.3 inch diameter Trans-Guard™ SX designs, respectively) |

CONSTRUCTION



SX Full-Range CL Fuses

TABLE 21 – DIMENSIONAL INFORMATION FOR TRANS-GUARD™ SX FUSES

| Wet Well Holder (kV) | Nominal Fuse Voltage Rating (kV) | Current Rating (Amps) | Dimensions inches (mm) | | |
|----------------------|----------------------------------|-----------------------|------------------------|---------------------|---------------------|
| | | | A | B | C |
| 8.3 | 5.5 | 100-250 | 3.29" (83.6mm) | 19.06" (484.1mm) | 14.66" (372.4mm) |
| | 8.3 | 5-75 | 2.22" (56.3mm) | 19.06" (484.1mm) | 7.93" (201.4mm) |
| | | 90-160 | 3.29" (83.6mm) | 19.06" (484.1mm) | 11.85" (300.1mm) |
| | 15.5 ¹ | 5-75 | 2.22" (56.3mm) | 19.06" (484.1mm) | 12.24" (310.9mm) |
| | | 90-150 | 3.29" (83.6mm) | 19.06" (484.1mm) | 14.66" (372.4mm) |
| | 15.5 | 15.5 | 5-75 | 2.22" (56.3mm) | 21.12" (536.4mm) |
| 90-150 | | | 3.29" (83.6mm) | 21.12" (536.4mm) | 14.66" (372.4mm) |
| 23.0 | 23.0 | 10-65 | 2.22" (56.3mm) | 21.12" (536.4mm) | 15.05" (382.3mm) |

NOTES:

- To order a 15.5kV fuse that will fit in an 8.3kV wet-well fuseholder, replace the 7th character ("0") in the catalog number (see Table 22) with a "2" (Example: HTSX242050).

TABLE 22 – ELECTRICAL CHARACTERISTICS OF TRANS-GUARD™ SX FUSES

| Nominal Fuse Voltage Rating (kV) | Current Rating (Amps) | Fuse Catalog Number | Rated Maximum Voltage (kV) | Maximum Continuous Current (in Oil @ 60°C) (5) | Peak Arc Voltage (6) (kV) | Minimum Melt I ² t (AMP ² SEC) | Maximum Melt I ² t (3) (4) (AMP ² SEC) |
|----------------------------------|-----------------------|---------------------|----------------------------|--|---------------------------|--|--|
| 5.5 | 100 | HTSX320100 | 5.5 | 114.0 | 15 | 22,100 | 110,000 |
| | 150 | HTSX320150 | | 147.0 | | 56,700 | 280,000 |
| | 175 | HTSX320175 | | 172.0 | | 78,300 | 380,000 |
| | 225 | HTSX320225 | | 230.0 | | 176,000 | 860,000 |
| | 250 | HTSX320250 | | 253.0 | | 259,000 | 1,270,000 |
| 8.3 | 5 | HTSX230005 | 10.0 | 5.0 | 30 | 100 | 350 |
| | 10 | HTSX230010 | | 11.5 | 32 | 620 | 2,700 |
| | 12 | HTSX230012 | | 14.0 | 28 | 800 | 4,000 |
| | 15 | HTSX230015 | | 17.0 | 28 | 800 | 4,000 |
| | 20 | HTSX230020 | | 22.5 | 26 | 920 | 8,000 |
| | 25 | HTSX230025 | | 25.0 | 26 | 1,310 | 9,500 |
| | 30 | HTSX230030 | | 30.0 | 26 | 1,620 | 11,000 |
| | 40 | HTSX230040 | 43.0 | 26 | 3,660 | 22,000 | |
| | 50 | HTSX230050 | 53.0 | 26 | 5,250 | 30,000 | |
| | 65 | HTSX230065 | 65.0 | 26 | 8,700 | 50,000 | |
| | 75 | HTSX230075 | 75.0 | 26 | 12,800 | 70,000 | |
| | 90 | HTSX330090 | 8.3 | 92.0 | 25 | 25,200 | 100,000 |
| | 100 | HTSX330100 | | 105.0 | | 47,500 | 185,000 |
| | 150 | HTSX330150 | | 150.0 | | 78,300 | 330,000 |
| 160 | HTSX330160 | 163.0 | | 115,150 | | 480,000 | |
| | | | | | | | |
| 15.5 | 5 | HTSX240005 | 17.2 | 5.0 | 51 | 100 | 510 |
| | 10 | HTSX240010 | | 11.5 | 54 | 620 | 2,600 |
| | 12 | HTSX240012 | | 14.0 | 46 | 800 | 3,700 |
| | 15 | HTSX240015 | | 17.0 | 46 | 800 | 3,700 |
| | 20 | HTSX240020 | | 22.5 | 43 | 920 | 6,500 |
| | 25 | HTSX240025 | | 25.0 | 45 | 1,310 | 8,000 |
| | 30 | HTSX240030 | | 30.0 | 45 | 1,620 | 10,000 |
| | 40 | HTSX240040 | 43.0 | 45 | 3,660 | 22,000 | |
| | 50 | HTSX240050 | 53.0 | 45 | 5,250 | 30,000 | |
| | 65 | HTSX240065 | 65.0 | 45 | 8,700 | 50,000 | |
| | 75 | HTSX240075 | 75.0 | 45 | 12,800 | 70,000 | |
| | 90 | HTSX340090 | 15.5 | 98.0 | 40 | 25,200 | 110,000 |
| | 100 | HTSX340100 | | 117.0 | | 39,400 | 185,000 |
| 150 | HTSX340150 | 150.0 | | 80,000 | | 380,000 | |
| 23.0 | 10 | HTSX250010 | 23.0 | 11.5 | 67 | 620 | 3,100 |
| | 12 | HTSX250012 | | 14.0 | 61 | 800 | 4,800 |
| | 15 | HTSX250015 | | 17.0 | 61 | 800 | 4,800 |
| | 20 | HTSX250020 | | 22.5 | 60 | 920 | 8,300 |
| | 25 | HTSX250025 | | 25.0 | 60 | 1,310 | 11,200 |
| | 30 | HTSX250030 | | 30.0 | 60 | 1,620 | 13,000 |
| | 40 | HTSX250040 | | 42.0 | 60 | 3,660 | 28,000 |
| | 50 | HTSX250050 | | 51.0 | 60 | 5,250 | 38,000 |
| 65 | HTSX250065 | 65.0 | 60 | 8,700 | 61,000 | | |

SX Full-Range CL Fuses

NOTES:

1. Designs have a 50,000 Amps rms. Symmetrical Rating (except 5A 17.2kV which was tested at 44kA maximum).
2. Fuses rated 75A and below are 2.25" in diameter. Higher ratings are 3.3" in diameter.
3. Tabulated Maximum Total I²t values are for currents of 50,000 amperes at the nominal voltage of the fuse. Fuses which have a Rated Maximum Voltage higher than their Nominal Voltage Rating will have a higher I²t let-through when applied at voltages up to these higher values. For example, Maximum Total I²t values are increased by approximately 30% when 8.3kV fuses are applied at 10 kV and approximately 25% when 15.5kV fuses are used at 17.2 kV.
4. Maximum total I²t values are reduced for currents below 50,000 A. For example, at 10,000 A, I²t values are approximately 15% less than the published values.
5. Maximum continuous currents at different ambient temperatures: These may be determined by derating the fuses by 0.2% per degree C over 60°C (for example at 80°C the derating would be 20 x .2 = 4%, making the maximum continuous current of a 20 A fuse 22.5 x .96 = 21.6A) or derating the fuses by .2 % per degree C under 60°C (for example at 40°C the derating would be 20 x .2 = 4 %, making the maximum continuous current of a 20 A fuse 22.5 / .96 = 23.4A). The long time melting current of the fuses (approximately one hour and longer) due to different ambient temperatures is the same as described above for "maximum continuous currents". See time current characteristics for melting characteristics in this time region.
6. Peak arc voltages quoted are for 50,000 A currents at the rated maximum voltage listed. Reduced currents and voltages will reduce the peak arc voltage. Consult the factory for further information.

TABLE 23 – RECOMMENDED TRANS-GUARD™ SX FOR SWITCHGEAR (MOUNTED IN A WET WELL FUSEHOLDER WITH A MAX. OIL TEMP. OF 60°C)

| Fuse Voltage | Recommended Fuse Current Ratings (Amperes) | | | | | | | | | | | | | | | | | |
|-------------------------|---|-------|--------------------|-----------------|--------------------|-----------------|-----------------|-----------------|------------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | (5.5kV) 8.3kV | | | | | | 15.5kV | | | | | | 23kV | | | | | |
| | Transformer 1-Phase Voltage Rating (kV) Phase-to-Ground | | | | | | | | | | | | | | | | | |
| 1-Phase Transformer kVA | 2.4 | | 4.16 | | 4.8 | | 7.2 | | 7.62 | | 12 | | 14.4 | | 16 | | 19.9 | |
| | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| 10 | | 10 | | 10 ^a | | 5 | | 5 ^a | | 5 ^a | | 5 ^a | | 5 ^a | | 5 ^a | | 10 ^a |
| 15 | | 12 | | 10 ^a | | 10 ^a | | 5 | | 5 | | 5 ^a | | 5 ^a | | 5 ^a | | 10 ^a |
| 25 | 20 ^b | 25 | | 12 | | 12 | | 10 ^a | | 10 ^a | | 5 | | 5 ^a | | 5 ^a | | 10 ^a |
| 37.5 | 30 ^b | 40 | | 20 | | 20 ^a | | 12 | | 12 ^a | | 10 ^a | | 10 ^a | | 10 ^a | | 10 ^a |
| 50 | 40 ^b | 50 | 25 ^b | 30 | 20 ^b | 25 | | 15 | | 15 | | 10 | | 10 ^a | | 10 ^a | | 10 ^a |
| 75 | 50 | 65 | 30 | 40 | 30 ^b | 40 | 20 ^b | 25 | | 20 | | 15 | | 12 | | 12 ^a | | 10 ^a |
| 100 | 65 | (100) | 40 | 50 | 40 ^b | 50 | 25 | 30 | 25 | 30 | | 20 | | 15 | | 15 | | 12 |
| 167 | (150) ^b | (175) | 65 | (100) | 50 | 75 | 40 | 50 | 40 ^b | 50 | 25 | 30 | 25 ^b | 30 | 20 ^b | 25 | | 20 |
| 250 | (150) | (225) | (100) | (150) | 75 | (100) | 50 | 75 | 50 | 65 | 40 ^b | 50 | 30 | 40 | 30 ^b | 40 | 25 ^b | 30 |
| 333 | (225) | | (150) | (175) | (150) ^b | (175) | 75 | 90 | 65 | 90 | 50 | 65 | 40 | 50 | 40 ^b | 50 | 30 | 40 |
| 500 | (250) ^c | | (175) | (250) | (150) | (225) | 100 | 150 | 100 | 150 | 65 | 90 | 50 | 75 | 50 | 65 | 40 | 50 |
| 833 | | | (250) ^c | | (250) | | 160 | | 160 | | 100 | 150 | 90 | 100 | 75 | | 65 | |
| 1000 | | | | | (250) ^c | | | | 160 ^c | | 150 | | 100 | 150 | | | | |
| 1500 | | | | | | | | | | | 150 ^c | | 150 | | | | | |

NOTE: Column A = 140-200% of transformer rating and Column B = 200-300% of transformer rating. See additional notes on page 26.

TABLE 24 – RECOMMENDED TRANS-GUARD™ SX FOR SWITCHGEAR: PROTECTING DELTA CONNECTED TRANSFORMERS (MOUNTED IN A WET WELL FUSEHOLDER WITH A MAX. OIL TEMP. OF 60°C)

| Fuse Voltage | Recommended Fuse Current Ratings (Amperes) | | | | | | | | | | | | | | | |
|-------------------------|--|-----------------|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|-----------------|------------------|-----------------|-----------------|-----------------|
| | (5.5kV) 8.3kV | | | | | | | | 15.5kV | | | | 23kV | | | |
| | Transformer 3-Phase Voltage Rating (kV) Phase-to-Phase | | | | | | | | | | | | | | | |
| 3-Phase Transformer kVA | 2.4 | | 4.16 | | 4.8 | | 7.2-7.96 | | 8.32 | | 12.47 | | 13.2-14.4 | | 20.8 | |
| | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| 15 | | 10 ^a | | 5 | | 5 | | 5 ^a | | 5 ^a | | 5 ^a | | 5 ^a | | 10 ^a |
| 22.5 | | 12 | | 10 ^a | | 10 ^a | | 5 | | 5 ^a | | 5 ^a | | 5 ^a | | 10 ^a |
| 30 | | 15 | | 10 | | 10 ^a | | 10 ^a | | 5 | | 5 ^a | | 5 ^a | | 10 ^a |
| 45 | 20 ^b | 25 | | 15 | | 12 | | 10 | | 10 ^a | | 5 | | 5 | | 10 ^a |
| 75 | 30 | 40 | 20 ^b | 25 | | 20 | | 12 | | 12 | | 10 ^a | | 10 ^a | | 10 ^a |
| 100 | 40 | 50 | 25 | 30 | 25 ^b | 30 | | 20 | | 15 | | 12 ^a | | 10 ^a | | 10 ^a |
| 112.5 | 40 | 65 | 30 ^b | 40 | 25 | 30 | | 20 | | 20 ^a | | 12 | | 12 ^a | | 10 ^a |
| 150 | 65 | 75 | 40 ^b | 50 | 30 | 40 | 25 ^b | 30 | 20 ^b | 25 | | 15 | | 15 | | 10 |
| 200 | 75 | (100) | 50 | 65 | 40 | 50 | 30 | 40 | 25 | 30 | | 20 | | 20 | | 12 |
| 225 | 75 | (100) | 50 | 75 | 40 | 65 | 30 | 40 | 30 ^b | 40 | 20 ^b | 25 | | 20 | | 15 |
| 300 | (150) ^b | (175) | 65 | (100) | 65 | 75 | 40 | 50 | 40 ^b | 50 | 25 | 30 | 25 | 30 | | 20 |
| 500 | (175) | (250) | (150) ^b | (175) | (100) | (150) | 65 | 90 | 50 | 75 | 40 | 50 | 40 ^b | 50 | 25 | 30 |
| 750 | (250) | | (150) | (225) | (150) | (225) | 90 | 150 | 75 | 100 ^d | 50 | 75 | 50 | 65 | 40 ^b | 50 |
| 1000 | | | (225) | | (175) | (250) | 150 | 160 | 100 ^d | 150 ^d | 75 | 90 | 65 | 90 | 50 | 65 |
| 1500 | | | (250) ^c | | (250) | | 160 | | 150 ^d | | 100 | 150 | 100 | 150 | 65 | |
| 2000 | | | | | | | | | | | 150 | | 150 | | | |
| 2500 | | | | | | | | | | | 150 ^c | | 150 | | | |
| 3000 | | | | | | | | | | | | | 150 ^c | | | |

NOTE: Column A = 140-200% of transformer rating and Column B = 200-300% of transformer rating. See additional notes on page 26.

SX Full-Range CL Fuses

TABLE 25 – RECOMMENDED TRANS-GUARD™ SX FOR SWITCHGEAR: PROTECTING GNDY-GNDY* CONNECTED TRANSFORMERS WITH LESS THAN 50% DELTA CONNECTED SECONDARY LOAD (MOUNTED IN A WET WELL FUSEHOLDER WITH A MAX. OIL TEMP. OF 60°C)

| Fuse Voltage | Recommended Fuse Current Ratings (Amperes) | | | | | | | | | | | | | | | | | | | |
|-------------------------|--|-----------------|--------------------|-----------------|-----------------|-----------------|--------------------|-----------------|--------------------|-----------------|------------------|-----------------|------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | (5.5kV) 8.3kV | | | | | | | | | | 15.5kV | | | | | 23kV | | | | |
| | Transformer 3-Phase Voltage Rating (kV) Phase-to-Phase | | | | | | | | | | | | | | | | | | | |
| 3-Phase Transformer kVA | 2.4 | | 4.16 | | 4.8 | | 7.2-7.96 | | 8.32 | | 12.47 | | 13.2-14.4 | | 20.8 | | 22.9-24.9 | | 34.5 | |
| | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B |
| 15 | | 10 ^a | | 5 | | 5 | | 5 ^a | | 5 ^a | | 5 ^a | | 5 ^a | | 5 ^a | | 5 ^a | | 10 ^a |
| 22.5 | | 12 | | 10 ^a | | 10 ^a | | 5 | | 5 ^a | | 5 ^a | | 5 ^a | | 5 ^a | | 5 ^a | | 10 ^a |
| 30 | | 15 | | 10 | | 10 ^a | | 10 ^a | | 5 | | 5 ^a | | 5 ^a | | 5 ^a | | 5 ^a | | 10 ^a |
| 45 | 20 ^b | 25 | | 15 | | 12 | | 10 | | 10 ^a | | 5 | | 5 | | 5 ^a | | 5 ^a | | 10 ^a |
| 75 | 30 | 40 | 20 ^b | 25 | | 20 | | 12 | | 12 | | 10 ^a | | 10 ^a | | 5 | | 5 | | 10 ^a |
| 100 | 40 | 50 | 25 | 30 | 25 ^b | 30 | | 20 | | 15 | | 12 ^a | | 10 ^a | | 10 ^a | | 10 ^a | | 10 ^a |
| 112.5 | 40 | 65 | 30 ^b | 40 | 25 | 30 | | 20 | | 20 ^a | | 12 | | 12 ^a | | 10 ^a | | 10 ^a | | 10 ^a |
| 150 | 65 | 75 | 40 ^b | 50 | 30 | 40 | 25 ^b | 30 | 20 ^b | 25 | | 15 | | 15 | | 10 | | 10 ^a | | 10 ^a |
| 200 | 75 | (100) | 50 | 65 | 40 | 50 | 30 | 40 | 25 | 30 | | 20 | | 20 | | 12 | | 12 | | 10 ^a |
| 225 | 75 | (100) | 50 | 75 | 40 | 65 | 30 | 40 | 30 ^b | 40 | 20 ^b | 25 | | 20 | | 15 | | 12 | | 10 ^a |
| 300 | (150) ^c | (175) | 65 | (100) | 65 | 75 | 40 | 50 | 40 ^b | 50 | 25 | 30 | 25 | 30 | | 20 | | 20 ^a | | 12 |
| 500 | (175) | (250) | (150) ^b | (175) | (100) | (150) | 65 | (100) | 50 | 75 | 40 | 50 | 40 ^b | 50 | 25 | 30 | 25 ^b | 30 | | 20 |
| 750 | (250) | | (150) | (225) | (150) | (225) | (100) | (150) | 75 | (100) | 50 | 75 | 50 | 65 | 40 ^b | 50 | 40 ^b | 50 | 25 ^b | 30 |
| 1000 | | | (225) | | (175) | (250) | (150) | (175) | (150) ^b | (175) | 75 | 90 | 65 | 90 ^d | 50 | 65 | 40 | 50 | 30 | 40 |
| 1500 | | | (250) ^c | | (250) | | (175) | (250) | (150) | (225) | 100 | 150 | 100 ^d | 150 ^d | 65 | 90 | 65 | 75 | 40 | 50 |
| 2000 | | | | | | | (225) | | (225) | | 150 | | 150 ^d | | 75 | 100 | 75 | 90 | 50 | |
| 2500 | | | | | | | (250) ^c | | (250) | | 160 | | 150 ^d | | 100 | 150 | 90 | 150 | 65 | |
| 3000 | | | | | | | | | | | 160 ^c | | | | 150 | | 100 | 150 | | |

SX Full-Range CL Fuses

*Phase-to-Ground rated fuses are commonly used for GndY/GndY connected transformers having no more than 50% Delta connected secondary load.

NOTES FOR TABLES 23, 24 AND 25:

Column A = 140-200% of transformer rating and Column B = 200-300% of transformer rating.

- Recommended fuses meet inrush criteria of 12 times transformer full load current for 0.1 second and 25 times transformer full load current for 0.01 second. Fuses also meet cold load pickup criteria of 6 times transformer full load current for 1 second and 3 times transformer full load current for 10 seconds.
- Ratings in parentheses are 5.5 kV rated fuses.
 - Fuse allows more than 300% of transformer rating.
 - Fuse allows more than 200% of transformer rating.
 - Fuse allows at least 125% of transformer rating.
 - 15.5kV fuse must be used for voltages over 8.32 kV for delta configurations or 13.8kV GndY/8.32kV.

Ordering Information:

To order the proper fuse for a particular application, first determine the correct fuse voltage and current rating using the published performance data (Table 22 and the applicable TCC). Then refer to Table 26 to determine the appropriate catalog number. Alternatively, fuse selection can be determined using the accompanying application Tables 23-25.

TABLE 26 – ORDERING INFORMATION FOR TRANS-GUARD™ SX FUSES

| Continuous Current Rating (Amps) | Catalog Number | | | |
|----------------------------------|----------------|------------|------------|------------|
| | 5.5kV | 8.3kV | 15.5kV | 23.0kV |
| 5 | – | HTSX230005 | HTSX240005 | – |
| 10 | – | HTSX230010 | HTSX240010 | HTSX250010 |
| 12 | – | HTSX230012 | HTSX240012 | HTSX250012 |
| 15 | – | HTSX230015 | HTSX240015 | HTSX250015 |
| 20 | – | HTSX230020 | HTSX240020 | HTSX250020 |
| 25 | – | HTSX230025 | HTSX240025 | HTSX250025 |
| 30 | – | HTSX230030 | HTSX240030 | HTSX250030 |
| 40 | – | HTSX230040 | HTSX240040 | HTSX250040 |
| 50 | – | HTSX230050 | HTSX240050 | HTSX250050 |
| 65 | – | HTSX230065 | HTSX240065 | HTSX250065 |
| 75 | – | HTSX230075 | HTSX240075 | – |
| 90 | – | HTSX330090 | HTSX340090 | – |
| 100 | HTSX320100 | HTSX330100 | HTSX340100 | – |
| 150 | HTSX320150 | HTSX330150 | HTSX340150 | – |
| 160 | – | HTSX330160 | – | – |
| 175 | HTSX320175 | – | – | – |
| 225 | HTSX320225 | – | – | – |
| 250 | HTSX320250 | – | – | – |

SX Full-Range CL Fuses

NOTES:

To order a 15.5kV fuse that will fit in an 8.3kV Wet-well fuseholder, replace the 7th character ("0") in the catalog number with a "2" (EXAMPLE: HTSX24**2**050).

Important Notice When Using Trans-Guard™ SX Fuses

When replacing the obsolete AB Chance SL fuse with a Hi-Tech Fuses Trans-Guard™ SX fuse, it is important to recognize that the SX fuse designs should not be used on distribution systems where the primary line-to-line voltage exceeds the rated maximum voltage of the fuse as shown in the chart to the right:

This should be considered when choosing a proper replacement for the AB Chance SL fuse as they were, in some cases, used on systems having line-to-line voltages greater than that of the current-limiting fuse component of the assembly.

Again, when choosing the appropriate Hi-Tech SX fuse to replace the AB Chance SL fuse, care must be taken to ensure that the rated maximum voltage of the SX fuse exceeds the system line-to-line voltage. The only exception to this requirement is when all the transformers that are downstream from the switches where the SX fuses are to be installed are GndY-GndY connected with less than 50% delta connected secondary load. In that case, a fuse having a rated maximum voltage exceeding the system line-to-neutral voltage may often be used.

| TRANS-GUARD™ SX | | |
|----------------------------------|-----------------------|----------------------------|
| Nominal Fuse Voltage Rating (kV) | Current Rating (Amps) | Rated Maximum Voltage (kV) |
| 5.5 | 100-250 | 5.5kV |
| 8.3 | 5-75 | 10.0kV |
| | 90-160 | 8.3kV |
| 15.5 | 5-75 | 17.2kV |
| | 90-150 | 15.5kV |
| 23.0 | 10-65 | 23.0kV |