The selection tables presented in this information bulletin supplement the selection tables contained in S&C Data Bulletin 350-110, "Selection Guide for the Protection of Overhead Distribution Transformers." The procedures described in S&C Data Bulletin 350-110 are fully applicable for use with these tables.

Before proceeding with the primary-fuse selection process, review the text portion of S&C Data Bulletin 350-110, paying particular attention to the text beginning on page 3 that describes the selection criteria for transformer-primary fuses. Specific instructions for use of the selection tables are described in the "How to Use the Selection Tables" section.

To locate the appropriate selection table based on the applicable transformer kV rating, refer to Table 1.

Table 1. Index to Selection Tables

Transformer Rating, kV			Table Number	Page Number
Single-Phase		Three-Phase		
Phase-to-Neutral	Phase-to-Phase			
6.9	6.9	12.0	2	2
7.2	7.2	12.47	3	3
7.62	—	13.2	4	3
7.96	—	13.8	5	4
8.32	8.32	14.4	6	4
13.2	13.2	22.9	7	5
13.8	13.8	23.9	8	5
14.4	14.4	24.90	9	6

How to Use the Selection Tables

STEP 1. Locate the appropriate selection table based on the applicable transformer kV rating. Refer to page 49 of S&C Data Bulletin 350-110 for an index to the selection tables.

STEP 2. Enter the table in the column corresponding to the fuse-link speed characteristic under consideration.

Read down the table in this column, stopping in the section corresponding to the transformer kVA rating. Find the first line in this section for which the peak-load capability values listed in all three columns: "Continuous Load," "Hot-Load Pickup," and "Cold-Load Pickup"—equal or exceed the peak loading values specified in the schedule of transformer loading established for your system.

Note: A a smaller fuse-link ampere rating can often be selected, thereby providing protection against a broader range of secondary-side faults, if it is feasible to forego complete cold-load pickup capability by sequentially restoring segmented load.

STEP 3. In the line selected in Step 2, and in the "Transformer Protection Index . . ." column corresponding to the transformer connection, determine the Transformer Protection Index (TPI).

If there is no TPI in this line, then the fuse-link ampere rating listed will not provide protection for the transformer in accordance with the transformer short-time characteristic curve. S&C recommends the use of a smaller ampere rating in this speed, provided the peak-load capability values listed are sufficient for the application. Alternately, consider using a fuse link with a different speed characteristic.

STEP 4. Read across the table to the right in the line selected in Step 3 to determine the recommended fuse-link ampere rating. For this ampere rating and speed characteristic, verify proper coordination exists between the transformer-primary fuse link and protective devices located on the primary side of the transformer as well as those on the secondary side of the transformer (if applicable).

STEP 5. Select the appropriate S&C Type XS Open Cutout based on the system voltage, interrupting duty, and maximum continuous current required. Refer to Table 21 on page 46 in S&C Data Bulletin 350-110.

Table 2. Transformers Rated 6.9 kV Single-Phase① or 12.0 kV Three-Phase

Transformer Rating, kVA		Transformer Full-Load Current, Amperes	Fuse-Cartridge Peak Load Capability,② Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating		Fuse Cartridge Rating, Amperes
1Ø	3Ø		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1Ø and △–△, Y–Y	Y–Y	
25	75	3.61	150	150	125	1370	—	5
			230	230	175	1900	—	7
37.5	112.5	5.41	155	155	115	275	1500	7
			220	220	165	535	1500	10
			330	330	220	765	1500	15
50	150	7.22	165	165	125	365	430	10
			245	245	165	545	600	15
			230	330	195	775	885	20
75	225	10.8	165	165	110	345	365	15
			220	220	130	495	520	20
100	300	14.4	165	165	100	360	375	20

① Phase to neutral or phase to phase.

② These values reflect the inherent peak-load capabilities of the fuse cartridges themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower.

Table 3. Transformers Rated 7.2 kV Single-Phase① or 12.47 kV Three-Phase

Transformer Rating, kVA		Transformer Full-Load Current, Amperes	Fuse-Cartridge Peak Load Capability,② Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating		Fuse Cartridge Rating, Amperes
1Ø	3Ø		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1Ø and △–△, Y–Y	Y–Y	
25	75	3.47	155	155	130	1490	—	5
			240	240	180	2055	—	7
37.5	112.5	5.21	160	160	120	275	—	7
			230	230	175	575	—	10
			345	345	230	800	—	15
50	150	6.94	170	170	130	385	455	10
			255	255	175	570	635	15
			345	345	205	815	915	20
75	225	10.4	170	170	115	360	380	15
			230	230	135	515	545	20
100	300	13.9	170	170	100	375	395	20

① Phase to neutral or phase to phase.

② These values reflect the inherent peak-load capabilities of the fuse cartridges themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower.

Table 4. Transformers Rated 7.62 kV Single-Phase① or 13.2 kV Three-Phase

Transformer Rating, kVA		Transformer Full-Load Current, Amperes	Fuse-Cartridge Peak Load Capability,② Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating		Fuse Cartridge Rating, Amperes
1Ø	3Ø		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1Ø and △–△, Y–Y	Y–Y	
25	75	3.28	165	165	135	335	—	5
			255	255	190	435	—	7
37.5	112.5	4.92	170	170	125	360	—	7
			240	240	185	615	—	10
			365	365	245	875	—	15
50	150	6.56	180	180	135	415	505	10
			270	270	185	610	700	15
			365	365	215	870	1025	20
75	225	9.84	180	180	120	385	405	15
			240	240	145	550	580	20
100	300	13.1	180	180	110	400	420	20

① Phase to neutral only.

② These values reflect the inherent peak-load capabilities of the fuse cartridges themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower.

Table 5. Transformers Rated 7.96 kV Single-Phase① or 13.8 kV Three-Phase

Transformer Rating, kVA		Transformer Full-Load Current, Amperes	Fuse-Cartridge Peak Load Capability,② Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating		Fuse Cartridge Rating, Amperes
1Ø	3Ø		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1Ø and △–△, Y–Y	Y–Y	
25	75	3.14	175	175	145	2500	—	5
			265	265	200	2500	—	7
37.5	112.5	4.71	175	170	135	305●	—	7
			255	240	190	675	—	10
			380	365	255	930	—	15
50	150	6.28	190	190	100	440	555	10
			285	285	145	640	765	15
			380	380	190	920	1090	20
75	225	9.41	190	190	125	405	425	15
			255	255	150	575	615	20
100	300	12.6	190	190	115	420	440	20

① Phase to neutral only.

② These values reflect the inherent peak-load capabilities of the fuse cartridges themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower.

● Applicable to single-phase transformers or three-phase transformer connected grounded-wye—grounded-wye.

Table 6. Transformers Rated 8.32 kV Single-Phase① or 14.4 kV Three-Phase

Transformer Rating, kVA		Transformer Full-Load Current, Amperes	Fuse-Cartridge Peak Load Capability,② Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating		Fuse Cartridge Rating, Amperes
1Ø	3Ø		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1Ø and △–△, Y–Y	Y–Y	
37.5	112.5	4.51	120	120	100	245	—	5
			185	185	140	1440	—	7
			265	265	200	730	—	10
50	150	6.01	140	140	105	240	1195	7
			200	200	150	465	610	10
			300	300	200	670	850	15
75	225	9.02	130	130	100	270	310	10
			195	195	130	425	445	15
			265	265	160	605	655	20
100	300	12.0	150	150	100	310	325	15
			200	200	120	440	460	20

① Phase to neutral or phase to phase.

② These values reflect the inherent peak-load capabilities of the fuse cartridges themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower.

Table 7. Transformers Rated 13.2 kV Single-Phase① or 22.9 kV Three-Phase

Transformer Rating, kVA		Transformer Full-Load Current, Amperes	Fuse-Cartridge Peak Load Capability,② Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating		Fuse Cartridge Rating, Amperes
1Ø	3Ø		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1Ø and △–△, Y–Y	Y–Y	
50	150	3.78	145	145	120	1035	—	5
			220	220	165	1775	—	7
			315	315	240	875	—	10
75	225	5.67	145	145	110	250	1200	7
			210	210	160	500	1200	10
			315	315	210	715	1200	15
100	300	7.56	155	155	120	340	395	10
			235	235	160	520	560	15
			315	315	190	735	815	20
167	500	12.6	190	190	110	420	435	20

① Phase to neutral or phase to phase.

② These values reflect the inherent peak-load capabilities of the fuse cartridges themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower.

Table 8. Transformers Rated 13.8 kV Single-Phase① or 23.9 kV Three-Phase

Transformer Rating, kVA		Transformer Full-Load Current, Amperes	Fuse-Cartridge Peak Load Capability,② Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating		Fuse Cartridge Rating, Amperes
1Ø	3Ø		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1Ø and △–△, Y–Y	Y–Y	
50	150	3.62	150	150	125	1355	—	5
			230	230	175	1880	—	7
75	225	5.44	150	150	115	270	1500	7
			220	220	165	535	1500	10
			330	330	220	760	1500	15
100	300	7.25	165	165	125	365	425	10
			245	245	165	545	595	15
			330	330	195	775	875	20
167	500	12.1	145	145	100	305	320	15
			195	195	115	440	460	20

① Phase to neutral or phase to phase.

② These values reflect the inherent peak-load capabilities of the fuse cartridges themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower.

Table 9. Transformers Rated 14.4 kV Single-Phase① or 24.9 kV Three-Phase

Transformer Rating, kVA		Transformer Full-Load Current, Amperes	Fuse-Cartridge Peak Load Capability,② Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating		Fuse Cartridge Rating, Amperes
1Ø	3Ø		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1Ø and △–△, Y–Y	Y–Y	
50	150	3.48	155	155	135	1470	—	5
			240	240	180	2050	—	7
75	225	5.22	160	160	120	295	—	7
			230	230	170	570	—	10
			345	345	230	800	—	15
100	300	6.96	170	170	130	380	455	10
			255	255	170	570	630	15
			345	345	205	815	930	20
167	500	11.6	155	155	100	320	335	15
			205	205	120	460	480	20

① Phase to neutral or phase to phase.

② These values reflect the inherent peak-load capabilities of the fuse cartridges themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower.