

FAULT CURRENT TABLES


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These tables are for use as a guide in determining fault current contribution from ED3, available at the point of delivery or transformer secondary terminals, as indicated. **These values are accurate only for the conditions stated. When actual conditions vary from those stated here, the engineer or electrical contractor must request specific information from ED3.**

TABLE 1														
Phase & Voltage →	1 Ø 120/240		3 Ø 120/240		3 Ø 120/240		3 Ø 120/208		3 Ø 120/208		3 Ø 277/480		3 Ø 277/480	
SES Amps	Pole/Pad		Pole		Pad		Pole		Pad		Pole		Pad	
	kVA	ISC	kVA	ISC	kVA	ISC	kVA	ISC	kVA	ISC	kVA	ISC	kVA	ISC
100	25	10,000	30	10,000	75	10,000	30	10,000	75	10,000	75	10,000	75	10,000
125	25	10,000	45	10,000	75	10,000	45	10,000	75	10,000	112-1/2	10,000	150	10,000
150	37-1/2	10,000	75	10,000	75	10,000	45	10,000	75	10,000	112-1/2	10,000	150	10,000
200	50	22,000	75	10,000	75	10,000	75	10,000	75	10,000	150	22,000	150	10,000
320	75	36,000	-	-	-	-	-	-	-	-	-	-	-	-
400	75	36,000	150	22,000	150	22,000	150	36,000	150	22,000	300	22,000	300	22,000
600	100	42,000	225	36,000	225	36,000	225	36,000	225	36,000	500	36,000	500	36,000
800	167	42,000	300	42,000	-	-	300	65,000	300	42,000	750	42,000	750	36,000
1,000	-	-	500	65,000	-	-	300	65,000	300	42,000	750	42,000	750	36,000
1,200	-	-	500	65,000	-	-	500	65,000	500	65,000	1,000	65,000	1,000	36,000
1,600	-	-	-	-	-	-	500	65,000	500	65,000	1,500	65,000	1,500	36,000
2,000	-	-	-	-	-	-	750	85,000	750	65,000	1,500	65,000	1,500	36,000
2,500	-	-	-	-	-	-	750	100,000	750	65,000	-	-	2,000	42,000
3,000	-	-	-	-	-	-	-	-	1,000	65,000	-	-	2,000	42,000
3,600	-	-	-	-	-	-	-	-	-	-	-	-	2,500	65,000
4,000	-	-	-	-	-	-	1,500	150,000	1,500	85,000	-	-	-	-

1. NOTES

- 1.1 The minimum interrupting rating of service equipment shall be in the table above. When Customer is served from a transformer that is or will feed more than one service entrance, the fault current may exceed these values. Consult with your ED3 Designer before ordering or designing your service entrance.
- 1.2 Fault current is based on 25 ft. of ED3 aluminum conductor and minimum transformer impedance. Transformer size is based on 80% of section size.
- 1.3 Fault increments are based on standard fuse sizes and standard breaker ratings.
- 1.4 Current values are symmetrical amperes of three phase faults on three phase transformers and are either phase-to-phase or phase-to-neutral, whichever is larger, for single phase transformers.
- 1.5 Consult ED3 for any transformer installation in a vault.
- 1.6 Three phase transformer kVA is the total of three equal size single phase transformers.

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The top of each table shows the total number of service entrance sections required per transformer.


2. SINGLE TRANSFORMER INSTALLATION SERVING ONE (1) SERVICE ENTRANCE SECTION

(Transformer size is based on eighty percent (80%) of the SES shown.)

TABLE 2														
Phase & Voltage →	1Ø 120 / 240		3Ø 120 / 240		3Ø 120 / 240		3Ø 120 / 208		3Ø 120 / 208		3Ø 277 / 480		3Ø 277 / 480	
	Pole / Pad		Pole		Pad		Pole		Pad		Pole		Pad	
	SES Amps	kVA	ISC	kVA	ISC	kVA	ISC	kVA	ISC	kVA	ISC	kVA	ISC	kVA
100	25	10,000	30	10,000	75	10,000	30	10,000	75	10,000	75	10,000	75	10,000
125	25	10,000	45	10,000	75	10,000	45	10,000	75	10,000	112.5	10,000	150	10,000
150	37.5	10,000	75	10,000	75	10,000	45	10,000	75	10,000	112.5	10,000	150	10,000
200	50	22,000	75	10,000	75	10,000	75	10,000	75	10,000	150	22,000	150	10,000
400	75	36,000	150	22,000	150	22,000	150	36,000	150	22,000	300	22,000	300	22,000
600	100	42,000	225	36,000	225	36,000	225	36,000	225	36,000	500	36,000	500	36,000
800	167	42,000	300	42,000	-	-	300	65,000	300	42,000	750	42,000	750	22,000
1000	-	-	500	65,000	-	-	300	65,000	300	42,000	750	42,000	750	22,000
1200	-	-	500	65,000	-	-	500	65,000	500	65,000	1000	65,000	1000	22,000
1600	-	-	-	-	-	-	500	65,000	500	65,000	1500	65,000	1500	36,000
2000	-	-	-	-	-	-	750	85,000	750	36,000	1500	65,000	1500	36,000

2.1 NOTES

- 2.1.1 See Tables on following pages for more than one (1) service from a transformer.
- 2.1.2 Fault current is based on twenty-five feet (25') of ED3 aluminum conductor and minimum transformer impedance.
- 2.1.3 Fault increments are based on standard fuse sizes and standard breaker ratings.
- 2.1.4 Current values are symmetrical amperes of three (3) phase faults on three (3) phase transformers and are either phase-to-phase or phase-to-neutral, whichever is larger, for single phase transformers.
- 2.1.5 Consult ED3 for any transformer installation in a vault.
- 2.1.6 Three (3) phase transformer kVA is the total of three (3) equal size single phase transformers.

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3. SINGLE TRANSFORMER INSTALLATION SERVING TWO SERVICE ENTRANCE SECTIONS

(Transformer size is based on seventy percent (70%) of the total SES sizes served.)

TABLE 3														
Total of all SES Amps	1Ø 120 / 240		3Ø 120 / 240		3Ø 120 / 240		3Ø 120 / 208		3Ø 120 / 208		3Ø 277 / 480		3Ø 277 / 480	
	Pole / Pad		Pole		Pad		Pole		Pad		Pole		Pad	
SES	kVA	ISC	kVA	ISC	kVA	ISC	kVA	ISC	kVA	ISC	kVA	ISC	kVA	ISC
200	37.5	22,000	75	22,000	75	22,000	75	22,000	75	22,000	150	22,000	150	10,000
400	75	36,000	150	36,000	150	22,000	112.5	22,000	150	22,000	300	36,000	300	22,000
600	100	42,000	225	36,000	225	36,000	225	42,000	225	36,000	500	36,000	500	36,000
800	167	65,000	300	65,000	300	42,000	225	42,000	225	36,000	500	36,000	500	36,000
1000	167	65,000	300	65,000	300	42,000	300	65,000	300	42,000	750	42,000	750	22,000
1200	-	-	500	65,000	500	65,000	500	85,000	500	85,000	750	42,000	750	22,000
1400	-	-	500	65,000	500	65,000	500	85,000	500	85,000	1000	65,000	1000	22,000
1600	-	-	500	65,000	500	65,000	500	85,000	500	85,000	1000	65,000	1000	22,000
1800	-	-	750	85,000	-	-	500	85,000	500	85,000	1500	85,000	1500	36,000
2000	-	-	750	85,000	-	-	750	100,000	750	36,000	1500	85,000	1500	36,000

3.1 NOTES

3.1.1 Fault current is at secondary terminals of transformer.

3.1.2 Fault increments are based on standard fuse sizes and standard breaker ratings.

3.1.3 Three (3) phase transformer kVA is the total of three (3) equal size single phase transformers.

3.1.4 Current values are symmetrical amperes of three (3) phase faults on three (3) phase transformers and either phase-to-phase or phase-to-neutral, whichever is larger for single phase transformers.

Example:

$$\begin{aligned}
 \text{Two SESs (both } 3\text{Ø)} & \quad 200 \text{ amp} \\
 & + \quad 400 \text{ amp} \\
 & = \quad 600 \text{ amp}
 \end{aligned}$$

Use Table 2 for a pad-mounted 120 / 208V, 36,000 ISC.

4. SINGLE TRANSFORMER INSTALLATION SERVING THREE OR MORE SERVICE ENTRANCE SECTIONS

(Transformer size is based on sixty percent (60%) of the total SES sizes served.)

TABLE 4														
Total of all SES Amps	1Ø 120 / 240		3Ø 120 / 240		3Ø 120 / 240		3Ø 120 / 208		3Ø 120 / 208		3Ø 277 / 480		3Ø 277 / 480	
	Pole / Pad		Pole		Pad		Pole		Pad		Pole		Pad	
SES	kVA	ISC	kVA	ISC	kVA	ISC	kVA	ISC	kVA	ISC	kVA	ISC	kVA	ISC
200	37.5	22,000	75	22,000	75	-	45	-	75	22,000	112.5	-	150	10,000
400	50	36,000	112.5	-	150	-	112.5	22,000	150	22,000	225	-	225	-
600	100	42,000	150	36,000	150	-	150	-	150	22,000	300	36,000	300	22,000
800	117	65,000	225	36,000	225	-	225	42,000	225	36,000	500	36,000	500	36,000
1000	167	65,000	300	65,000	300	-	225	42,000	225	36,000	500	36,000	500	36,000
1200	-	-	300	65,000	300	-	300	65,000	300	42,000	750	42,000	750	22,000
1400	-	-	500	65,000	500	-	500	85,000	500	85,000	750	42,000	750	22,000
1600	-	-	500	65,000	500	-	500	85,000	500	85,000	1000	65,000	1000	22,000
1800	-	-	500	65,000	500	-	500	85,000	500	85,000	1000	65,000	1000	22,000
2000	-	-	500	65,000	500	-	500	85,000	500	85,000	1000	65,000	1000	22,000

4.1 NOTES

4.1.1 Fault current is at secondary terminals of transformer.

4.1.2 Fault increments are based on standard fuse sizes and standard breaker ratings.


4.1.3 Three (3) phase transformers kVA is the total of three (3) equal size single phase transformers.

4.1.4 Current values are symmetrical amperes of three (3) phase faults on three (3) phase transformers and either phase-to-phase or phase-to-neutral, whichever is larger for single phase transformers.

Example:

Three SESs (all 3Ø) 200 amp
 400 amp
 + 600 amp
 = 1200 amp

Use Table 3 for a pad-mounted
 120 / 208V, 42,000 ISC.

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5. **MINIMUM CONDUCTOR LENGTH REQUIRED TO LIMIT THE FAULT CURRENT TO 22,000 AMPS**

TABLE 5					
Conductor Size	Transformer Size – 1 Ø				
	25kVA	50kVA	75kVA	100kVA	167kVA
	<i>(length below in feet)</i>				
1/0 Triplex (#2 N)	0	0	8	12	15
4/0 Triplex (1/0 N)	0	0	12	19	24
350 MCM Triplex (4/0 N)	0	0	21	34	42
4/0 Copper	0	0	22	34	53

5.1 **NOTES**

5.1.1 This chart applies to 1 Ø self-contained metering equipment RATED 22,000 AIC. The limits are based on line-to-ground or line-to-line faults and minimum transformer impedance. Conductor impedance: phase @ 90° C, neutral @ 65°C. Transformer 1/2 winding impedance: 0.75R+JX.

6. **MINIMUM CONDUCTOR LENGTH REQUIRED TO LIMIT FAULT CURRENT TO 10,000 AMPS**


TABLE 6					
Conductor Size	Transformer Size – 1 Ø				
	25kVA	50kVA	75kVA	100kVA	167kVA
	<i>(length below in feet)</i>				
1/0 Triplex (#2 N)	5	30	38	45	51
4/0 Triplex (1/0 N)	8	50	70	86	96
350 MCM Triplex (4/0 N)	13	87	112	130	146
4/0 Copper	6	64	103	123	165

6.1 **NOTES**

6.1.1 This chart applies to 1 Ø self-contained metering equipment RATED 10,000 AIC. The limits are based on line-to-ground or line-to-line faults and minimum transformer impedance. Conductor impedance: phase @ 90° C, neutral @ 65°C. Transformer ½ winding impedance: 0.75R+JX.

6.1.2 If requirements cannot be met in Table 3 above, then bracing at 22,000 amps is required, given the limitations shown in Table 5 above.

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