

Duke Energy Medium Power Transformer Standard Sizes and Ratings for Retail/Distribution/Direct Serve Substations

Effective Date: October 14, 2008

**Duke Energy Medium Power Transformer Standard Sizes and Ratings
for Retail/Distribution/Direct Serve Substations**

TRF Design #	MVA Rating @ 65 Deg. C	HV Rating (volts)	HV Taps (volts)	LV Rating (volts)	LV Taps	% Imped. HV-LV	OLTC	Phases 1 or 3	High Voltage CT			Low Voltage CT			Neutral CT		
									Ratio	Accuracy Rating	Rating Factor	Ratio	Accuracy Rating	Rating Factor	Ratio	Accuracy Rating	Rating Factor
1 ¹	11.2/14	44,000	47,000 46,000 45,000 44,000 43,000 42,000	13,090Y/7,560	None	7.3% @ 11.2 MVA	No	3	600/5	C400	2.0	N/A	N/A	N/A	1200/5	C400	2.0
2	(Deleted)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	3.733	44,000	46,000 45,000 44,000 43,000 42,000	7,560 X 2,520	None	7.3% @ 3.733 MVA	No	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	(Deleted)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	13.44/17.92/22.4	101,250	105,750 103,500 101,250 99,000 96,750 94,500	13,800Y/7,960	None	9.5% @ 13.4 MVA	No	3	600/5	C800	2.0	1200/5	C400	2.0	1200/5	C400	2.0
6	22.4/29.86/37.33	101,250	105,750 103,500 101,250 99,000 96,750 94,500	13,090Y/7,560	None	13.2% @ 22.4 MVA	Yes	3	600/5	C800	2.0	2000/5	C400	2.0	1200/5	C400	2.0

¹ Transformer Design #1 shall be designed to be shipped **fully assembled with oil**. The fully assembled transformer shall weigh less than 60,000 pounds and shall not exceed 216" (long) x 102" (wide) x 138" (high). Duke Energy may consider the removal of high voltage arrester brackets and high voltage bushings spade lugs for shipment allowable with permission.

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									Ratio	Accuracy Rating	Rating Factor	Ratio	Accuracy Rating	Rating Factor	Ratio	Accuracy Rating	Rating Factor
7	22.4/29.86/37.33	101,250	103,500 101,250 99,000 96,750 94,500	24,940Y/14,400	None	13.2% @ 22.4 MVA	Yes	3	600/5	C800	2.0	1200/5	C400	2.0	1200/5	C400	2.0
8	33.6/44.8/56	101,250	103,500 101,250 99,000 96,750 94,500	24,940Y/14,400	None	13.2% @ 33.6 MVA	Yes	3	600/5	C800	2.0	2000/5	C400	2.0	1200/5	C400	2.0
9	13.44/17.92/22.4	101,250	105,750 103,500 101,250 99,000 96,750 94,500	13,090Y/7,560	None	9.5% @ 13.4 MVA	No	3	600/5	C800	2.0	1200/5	C400	2.0	1200/5	C400	2.0
10	13.44/17.92/22.4	101,250	103,500 101,250 99,000 96,750 94,500	24,940Y/14,400	None	9.5% @ 13.4 MVA	No	3	600/5	C800	2.0	1200/5	C400	2.0	1200/5	C400	2.0
11	22.4/29.86/37.33	101,250	105,750 103,500 101,250 99,000 96,750 94,500	13,090Y/7,560	None	13.2% @ 22.4 MVA	No	3	600/5	C800	2.0	2000/5	C400	2.0	1200/5	C400	2.0
12	22.4/29.86/37.33	101,250	103,500 101,250 99,000 96,750 94,500	24,940Y/14,400	None	13.2% @ 22.4 MVA	No	3	600/5	C800	2.0	1200/5	C400	2.0	1200/5	C400	2.0

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									Ratio	Accuracy Rating	Rating Factor	Ratio	Accuracy Rating	Rating Factor	Ratio	Accuracy Rating	Rating Factor
13 ²	11.2/14	67,000 Delta	70,600 68,800 67,000 65,200 63,400	13,200Y/7,620	None	7.8% @11.2 MVA	No	3	600/5	C400	2.0	N/A	N/A	N/A	1200/5	C400	2.0

² Transformer Design #13 shall be designed to be shipped **fully assembled with oil**. The fully assembled transformer shall weigh less than 60,000 pounds and shall not exceed 216" (long) x 102" (wide) x 138" (high). Duke Energy shall be notified during the design stage if the removal of high voltage draw-lead bushings/spade lugs and high voltage arrester brackets is necessary for shipment. Written permission must be provided to exceed the shipping dimensions.