

Type DT-3

2



Product Description

Note: The following pages provide listings for most standard transformer ratings and catalog numbers. For other ratings or catalog numbers not shown, or for special enclosure types (including stainless steel), refer to Eaton.

Types DS-3, DT-3

- Ventilated, NEMA® 2 enclosure standard
- Suitable for indoor applications, outdoors when weathershields are also installed
- Upright mounting only
- 220 °C insulation system
- 150 °C rise standard; 115 °C or 80 °C rise optional
- Available in single-phase ratings 15–167 kVA, 600 volts primary (DS-3)
- Available in three-phase ratings 15–1500 kVA and up to 600 volts primary (DT-3)

Application Description

DOE 2016 compliant energy-efficient transformers are specifically designed to meet the energy efficiency standards set forth in “CFR Title 10 Chapter II Part 431, Appendix A of Subpart K 2016.” Surveys have shown that the average loading of low-voltage dry-type distribution transformers, over a 24-hour period, is approximately 35%. DOE 2016 compliant transformers are optimized to offer maximum efficiency at 35% of nameplate rating.

The range of products covered by DOE 2016 is:

DOE 2016 Product Range

Rating	Voltage Class	Voltage
	Primary voltage	34.5 kV and below
	Secondary voltage	600 V and below
Low-Voltage Dry-Type Rating	Single-phase	10–833 kVA
	Three-phase	15–2500 kVA
Liquid Rating	Single-phase	10–833 kVA
	Three-phase	15–2500 kVA

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Transformers that are currently specifically excluded from the scope of CFR Title 10 Chapter II Part 431, Appendix A of Subpart K 2016 include:

- Liquid-filled transformers below 10 kVA
- Low-voltage dry-type transformers below 15 kVA
- AC and DC drives transformers
- Rectifier transformers designed for high harmonics
- Autotransformers
- Non-distribution transformers, such as UPS transformers
- Special impedance or regulation transformers
- Regulating transformers
- Sealed and non-ventilated transformers
- Machine tool transformers
- Welding transformers
- Transformers with tap ranges greater than 15%
- Transformers with a frequency other than 60 Hz
- Grounding transformers
- Testing transformers

Efficiency levels set forth in DOE 2016.

DOE 2016 Efficiency Levels

Low-Voltage Dry-Type Distribution Transformers (600 V and below)

Single-Phase		Three-Phase	
kVA	Efficiency	kVA	Efficiency
15	97.70	15	97.89
25	98.00	30	98.23
37.5	98.20	45	98.40
50	98.30	75	98.60
75	98.50	112.5	98.74
100	98.60	150	98.83
167	98.70	225	98.94
250	98.80	300	99.02
333	98.90	500	99.14
—	—	750	99.23
—	—	1000	99.28

Three-Phase Drive Isolation

460 Delta Volts to 460Y/266 Volts

hp	kVA	Full Capacity Taps		°C Temp. Rise	Frame	Wiring Diagram Number	Weight Lb (kg)	Weathershield	Catalog Number
		FCAN	FCBN						
5	7.5	1 at +5%	1 at -5%	150	FR912D	286D	164 (74)	WS38	MD075E92
7.5	11				FR912D		161 (73)	WS38	MD11E92
10	14				FR912D		173 (79)	WS38	MD14E92
15	20				FR912D		231 (105)	WS38	MD20E92
20	27				FR912D		250 (114)	WS38	MD27E92
25	34				FR912D		310 (141)	WS38	MD34E92
30	40				FR912D		310 (141)	WS38	MD40E92
40	51				FR914D		503 (228)	WS39	MD51E92
50	63				FR914D		535 (243)	WS39	MD63E92
60	75				FR914D		535 (243)	WS39	MD75E92
75	93				FR916A		710 (322)	WS19	MD93E92
100	118				FR916A		770 (350)	WS19	MD118E92
125	145				FR916A		866 (393)	WS19	MD145E92
150	175				FR917		1100 (499)	WS34	MD175E92
200	220				FR918A		1100 (499)	WS34	MD220E92
250	275				FR918A		1469 (667)	WS34	MD275E92
300	330				FR919E	318E	2587 (1174)	WS35	MD330E92
400	440				FR919E		2500 (1135)	WS35	MD440E92

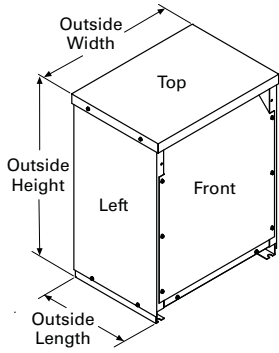
Note

For other ratings or catalog numbers not shown, or for special enclosure types (including stainless steel), refer to Eaton. Frame drawings/dimensions information begins on **Page V2-T2-204**.

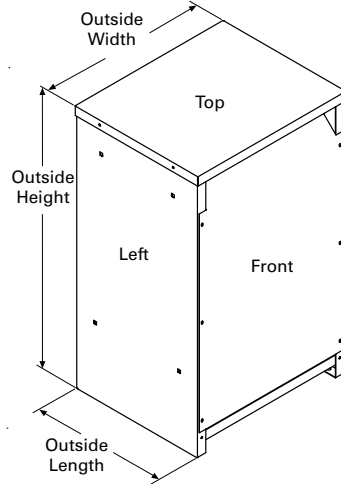
Dimensions

Approximate Dimensions in Inches (mm)

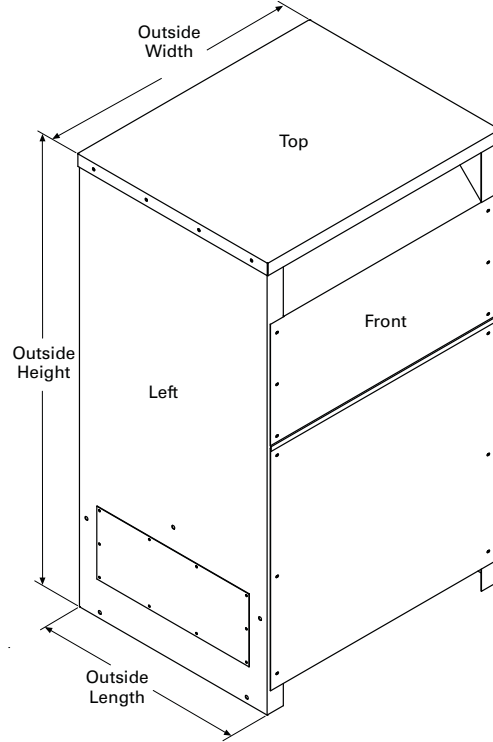
2 Enclosure Dimensional Drawings—Ventilated Transformers



Drawing 1



Drawing 2



Drawing 3

Frame	Drawing Number	Dimensions		
		Height	Width	Length
FR816	1	31.30 (795.0)	22.89 (581.4)	18.39 (467.2)
FR818	1	37.59 (954.8)	22.89 (581.4)	20.36 (517.1)
FR819	2	42.03 (1067.6)	24.22 (615.2)	23.84 (605.5)
FR820	2	42.03 (1067.6)	24.22 (615.2)	23.84 (605.5)
FR814	2	62.91 (1597.9)	29.97 (761.2)	33.97 (862.8)
FR842, 842A	1	33.75 (857.3)	22.45 (570.2)	17.40 (442.0)
FR843, 843A	1	38.70 (983.0)	23.51 (597.2)	24.38 (619.3)
FR844, 844A	2	44.92 (1141.0)	26.27 (667.3)	27.12 (688.8)
FR821	2	62.91 (1597.9)	29.97 (761.2)	33.97 (862.8)
FR912D	1	30.00 (762.0)	23.00 (584.2)	16.50 (419.1)
FR914D/FR914F	1	39.00 (990.6)	29.00 (736.6)	22.00 (558.8)
FR915D/FR915F	1	39.00 (990.6)	29.00 (736.6)	22.00 (558.8)
FR916A	2	48.56 (1233.4)	28.22 (716.8)	23.42 (594.9)
FR917	2	56.17 (1426.7)	31.44 (798.6)	24.67 (626.6)
FR918A	2	62.18 (1579.4)	31.44 (798.6)	30.68 (779.3)
FR923	2	57.54 (1461.5)	36.69 (931.9)	32.65 (829.3)
FR924	2	68.37 (1736.6)	44.46 (1129.3)	36.44 (925.6)
FR928	2	56.16 (1426.5)	32.93 (836.4)	27.97 (710.4)
FR929	2	59.56 (1512.8)	36.72 (932.7)	32.50 (825.5)
FR919E	3	75.00 (1905.0)	44.20 (1122.7)	36.23 (920.2)
FR920E	3	75.00 (1905.0)	44.20 (1122.7)	36.23 (920.2)
FR922	3	90.00 (2286.0)	69.26 (1759.2)	42.65 (1083.3)