

Dry Type Transformers

Buck-Boost

Encapsulated

For Bucking and Boosting Voltage

Section 10

Single-Phase Indoor/Outdoor Type QB 60 Hz UL Listed C-UL Listed

Input Voltage	Output Voltage	kVA	Height (in)	Width (in)	Depth (in)	Approx. Net Weight (Lbs.)	Frame Size	Product Number
120/240 Volts	12/24 Volts	0.05	6.38	5.12	3.25	6	6100	9T51B0102
120/240 Volts	12/24 Volts	0.075	6.38	5.12	3.25	6	6200	9T51B0103
120/240 Volts	12/24 Volts	0.1	6.38	5.12	3.25	6	6200	9T51B0104
120/240 Volts	12/24 Volts	0.15	7.38	6.12	4.25	10	8175	9T51B0105
120/240 Volts	12/24 Volts	0.25	7.38	6.12	4.25	10	8175	9T51B0107
120/240 Volts	12/24 Volts	0.5	8.38	6.88	4.88	20	10225	9T51B0108
120/240 Volts	12/24 Volts	0.75	9.62	7.88	5.50	25	12200	9T51B0109
120/240 Volts	12/24 Volts	1	9.62	7.88	5.50	25	12225	9T51B0110
120/240 Volts	12/24 Volts	1.5	11.12	9.38	6.72	40	14200	9T51B0111
120/240 Volts	12/24 Volts	2	11.12	9.38	6.72	50	14300	9T51B0112
120/240 Volts	12/24 Volts	3		9.38	6.72	55	14350	9T51B0113
120/240 Volts	16/32 Volts	0.05	6.38	5.12	3.25	6	6100	9T51B0122
120/240 Volts	16/32 Volts	0.075	6.38	5.12	3.25	6	6200	9T51B0123
120/240 Volts	16/32 Volts	0.1	6.38	5.12	3.25	6	6200	9T51B0124
120/240 Volts	16/32 Volts	0.15	7.38	6.12	4.25	10	8175	9T51B0125
120/240 Volts	16/32 Volts	0.25	7.38	6.12	4.25	10	8175	9T51B0127
120/240 Volts	16/32 Volts	0.5	8.38	6.88	4.88	20	10225	9T51B0128
120/240 Volts	16/32 Volts	0.75	9.62	7.88	5.50	25	12200	9T51B0129
120/240 Volts	16/32 Volts	1	9.62	7.88	5.50	30	12300	9T51B0130
120/240 Volts	16/32 Volts	1.5	11.12	9.38	6.72	40	14200	9T51B0131
120/240 Volts	16/32 Volts	2	11.12	9.38	6.72	50	14300	9T51B0132
120/240 Volts	16/32 Volts	3		9.38	6.72	55	14350	9T51B0133
240/480 Volts	24/48 Volts	0.05	6.38	5.12	3.25	6	6100	9T51B0202
240/480 Volts	24/48 Volts	0.075	6.38	5.12	3.25	6	6200	9T51B0203
240/480 Volts	24/48 Volts	0.1	6.38	5.12	3.25	6	6200	9T51B0204
240/480 Volts	24/48 Volts	0.15	7.38	6.12	4.25	10	8175	9T51B0205
240/480 Volts	24/48 Volts	0.25	7.38	6.12	4.25	10	8175	9T51B0207
240/480 Volts	24/48 Volts	0.5	8.38	6.88	4.88	20	10225	9T51B0208
240/480 Volts	24/48 Volts	0.75	9.62	7.88	5.50	25	12200	9T51B0209
240/480 Volts	24/48 Volts	1	9.62	7.88	5.50	30	12275	9T51B0210
240/480 Volts	24/48 Volts	1.5	11.12	9.38	6.72	40	14200	9T51B0211
240/480 Volts	24/48 Volts	2	11.12	9.38	6.72	50	14300	9T51B0212
240/480 Volts	24/48 Volts	3	11.12	9.38	6.72	55	14350	9T51B0213

Single-Phase Indoor/Outdoor Type QMS 60 Hz UL Listed C-UL Listed

Input Voltage	Output Voltage	kVA	Height (in)	Width (in)	Depth (in)	Approx. Net Weight (Lbs.)	Frame Size	Product Number
120/240 Volts	12/24 Volts	5	14.5	10.62	11	103	16350	9T21B1037G02
120/240 Volts	16/32 Volts	5	14.5	10.62	11	115	16400	9T21B1040G02

Single-Phase Indoor/Outdoor Type QMS 50 Hz UL Listed C-UL Listed

Input Voltage	Output Voltage	kVA	Height (in)	Width (in)	Depth (in)	Approx. Net Weight (Lbs.)	Frame Size	Product Number
120/240 Volts	12/24 Volts	5	14.5	10.62	11	115	16400	9T21B1061G02
120/240 Volts	16/32 Volts	5	14.5	10.62	11	127	16450	9T21B1064G02

NOTE: In addition to bucking or boosting low circuit voltages to related value, these transformers can be used as two winding transformers to supply the rated nameplate low voltages, 12 to 48 Volts, two-wire or 12/24 to 24/48 Volts, three-wire. Also available in 50/60 Hz ratings.



Dry Type Transformers

Buck-Boost Selection Tables

Encapsulated

For Bucking and Boosting Voltage

5-Step Selection

The tables on these pages greatly facilitate buck-boost transformer selection. Simply follow these five easy steps:

1. Refer to the table having the same “output voltage” as the equipment you want to operate. For example, if you are installing a 230 Volt single-phase air conditioner, use the 230 Volt table.
2. Different available “line voltages” are listed across the top of each table. Select the line voltage column closest to your actual supply. If your available line voltage is exactly midway between two listed voltage levels, you may use either voltage column. For example, in the 230 Volt table, if you have 212 available, use either the 208 or the 216 column.
3. Read down the available line voltage column until you reach the rated load kVA of the equipment you want to operate or “the next higher kVA” rating. For example, in the 230 Volt table under the 208 available line voltage column, you want to operate an air conditioner rated 2 kVA. Since 2 kVA is not listed as such, you must read down to the next higher value or 2.4 kVA.

4. Once you have established this point, read across to the far left column for the exact GE buck-boost model number for your application. For example, the 230 Volt table under the 208 column for a 2 kVA air conditioner, read across from 2.4 (next higher kVA rating) and the model number is 9T51B0107.
5. Connect the buck-boost transformer you have selected per the connection diagram specified at the “bottom” of the available line voltage column you used. For example, if you used the 208 column, you would connect the buck-boost transformer per connection diagram A. That’s all there is to it! The transformer you’ve selected will meet your exact requirements when connected in the specified manner.

The formula for calculating single-phase kVA is:

$$\frac{\text{Load Voltage} \times \text{Full Load Amps}}{1000}$$

The formula for calculating three-phase kVA is:

$$\frac{1.732 \times \text{Load Voltage} \times \text{Load Amps}}{1000}$$

Table 1

230 Volts Output, 60 Hertz, Single-Phase

Product Number	Available Line Voltage									
	192	203	208	216	219	242	245	353	261	276
	Load kVA ¹									
9T51B0102	—	—	0.480	—	0.960	1.0	—	0.530	—	—
9T51B0122	—	0.360	—	0.720	—	—	0.770	—	0.410	—
9T51B0202	0.240	—	—	—	—	—	—	—	—	0.288
9T51B0103	—	—	0.720	—	1.5	1.6	—	0.800	—	—
9T51B0123	—	0.540	—	1.1	—	—	1.2	—	0.620	—
9T51B0203	0.359	—	—	—	—	—	—	—	—	0.431
9T51B0104	—	—	0.960	—	2.0	2.1	—	1.1	—	—
9T51B0124	—	0.720	—	1.5	—	—	1.6	—	0.820	—
9T51B0204	0.479	—	—	—	—	—	—	—	—	0.575
9T51B0105	—	—	1.5	—	2.9	3.1	—	1.6	—	—
9T51B0125	—	1.1	—	2.2	—	—	2.3	—	1.3	—
9T51B0205	0.719	—	—	—	—	—	—	—	—	0.863
9T51B0107	—	—	2.4	—	4.8	5.1	—	2.7	—	—
9T51B0127	—	1.8	—	3.6	—	—	3.9	—	2.1	—
9T51B0207	1.2	—	—	—	—	—	—	—	—	1.4
9T51B0108	—	—	4.8	—	9.6	10.1	—	5.3	—	—
9T51B0128	—	3.6	—	7.2	—	—	7.7	—	4.1	—
9T51B0208	2.4	—	—	—	—	—	—	—	—	2.9
9T51B0109	—	—	7.2	—	14.4	15.2	—	7.9	—	—
9T51B0129	—	5.4	—	10.8	—	—	11.5	—	6.2	—
9T51B0209	3.6	—	—	—	—	—	—	—	—	4.3
9T51B0110	—	—	9.6	—	19.2	20.2	—	10.6	—	—
9T51B0130	—	7.2	—	14.4	—	—	15.4	—	8.2	—
9T51B0210	4.8	—	—	—	—	—	—	—	—	5.7
9T51B0111	—	—	14.4	—	28.8	30.3	—	15.9	—	—
9T51B0131	—	10.8	—	21.6	—	—	23.0	—	12.3	—
9T51B0211	7.2	—	—	—	—	—	—	—	—	8.6
9T51B0112	—	—	19.1	—	38.4	40.4	—	21.1	—	—
9T51B0132	—	14.4	—	28.8	—	—	30.7	—	16.4	—
9T51B0212	9.6	—	—	—	—	—	—	—	—	11.5
9T51B0113	—	—	28.7	—	57.5	60.5	—	31.7	—	—
9T51B0133	—	21.6	—	43.2	—	—	46.0	—	24.5	—
9T51B0213	14.4	—	—	—	—	—	—	—	—	17.3
9T21B1037G02	—	—	47.8	—	95.9	100.9	—	52.7	—	—
9T21B1040G02	—	36.0	—	72.0	—	—	77.0	—	40.8	—
Connection Diagram	C	A	A	B	B	B	B	A	A	C

¹The load kVA is the maximum load at voltages shown when transformers are connected as autotransformers according to the diagram referenced.



Dry Type Transformers Buck-Boost Selection Tables Encapsulated For Bucking and Boosting Voltage

Table 2
240 Volts Output, 60 Hertz, Single-Phase

Product Number	Available Line Voltage									
	200	212	218	225	229	252	256	264	272	288
	Load kVA ¹									
9T51B0102	—	—	0.500	—	1.0	1.1	—	0.6	—	—
9T51B0122	—	0.380	—	0.750	—	—	0.800	—	0.430	—
9T51B0202	0.250	—	—	—	—	—	—	—	—	0.300
9T51B0103	—	—	0.750	—	1.5	1.6	—	0.825	—	—
9T51B0123	—	0.570	—	1.2	—	—	1.2	—	0.640	—
9T51B0203	0.375	—	—	—	—	—	—	—	—	0.391
9T51B0104	—	—	1.0	—	2.0	2.1	—	1.1	—	—
9T51B0124	—	0.750	—	1.5	—	—	1.6	—	0.850	—
9T51B0204	0.500	—	—	—	—	—	—	—	—	0.522
9T51B0105	—	—	1.5	—	3.0	3.2	—	1.7	—	—
9T51B0125	—	1.2	—	2.3	—	—	2.4	—	1.3	—
9T51B0205	0.750	—	—	—	—	—	—	—	—	0.782
9T51B0107	—	—	2.5	—	5.0	5.3	—	2.8	—	—
9T51B0127	—	1.9	—	3.8	—	—	4.0	—	2.2	—
9T51B0207	1.3	—	—	—	—	—	—	—	—	1.4
9T51B0108	—	—	5.0	—	10.0	10.5	—	5.5	—	—
9T51B0128	—	3.8	—	7.5	—	—	8.0	—	4.3	—
9T51B0208	2.5	—	—	—	—	—	—	—	—	2.6
9T51B0109	—	—	7.5	—	15.0	15.8	—	8.3	—	—
9T51B0129	—	5.7	—	11.3	—	—	12.0	—	6.4	—
9T51B0209	3.8	—	—	—	—	—	—	—	—	4.0
9T51B0110	—	—	10.0	—	20.0	21.0	—	11.0	—	—
9T51B0130	—	7.5	—	15.0	—	—	16.0	—	8.5	—
9T51B0210	5.0	—	—	—	—	—	—	—	—	5.2
9T51B0111	—	—	15.0	—	30.0	31.5	—	16.5	—	—
9T51B0131	—	11.3	—	22.5	—	—	24.0	—	12.8	—
9T51B0211	7.5	—	—	—	—	—	—	—	—	7.8
9T51B0112	—	—	20.0	—	40.0	42.6	—	22.0	—	—
9T51B0132	—	15.0	—	30.0	—	—	32.0	—	17.0	—
9T51B0212	10.0	—	—	—	—	—	—	—	—	10.4
9T51B0113	—	—	30.0	—	60.0	63.0	—	33.0	—	—
9T51B0133	—	22.5	—	45.0	—	—	48.0	—	25.5	—
9T51B0213	15.0	—	—	—	—	—	—	—	—	15.6
9T21B1037G02	—	—	50.0	—	100.0	105.0	—	55.0	—	—
9T21B1040G02	—	37.5	—	75.0	—	—	80.0	—	42.5	—
Connection Diagram	C	A	A	B	B	B	B	A	A	C

¹The load kVA is the maximum load at voltages shown when transformers are connected as autotransformers according to the diagram referenced.



Dry Type Transformers Buck-Boost Selection Tables Encapsulated For Bucking and Boosting Voltage

Section 10

Table 5
230 Volts, 3-Wire Output, 60 Hertz, Three-Phase²

Quantity Required Per Bank	Product Number	Available Line Voltage				
		181Y/105	192Y/111	203Y/117	208Y/120	277Y/160
		Load kVA ¹				
3	9T51B0102	—	0.830	—	1.7	—
3	9T51B0122	0.620	—	1.3	—	—
3	9T51B0202	—	—	—	—	0.480
3	9T51B0103	—	1.2	—	2.5	—
3	9T51B0123	0.930	—	1.9	—	—
3	9T51B0203	—	—	—	—	0.720
3	9T51B0104	—	1.7	—	3.4	—
3	9T51B0124	1.2	—	2.5	—	—
3	9T51B0204	—	—	—	—	0.960
3	9T51B0105	—	2.5	—	5.0	—
3	9T51B0125	1.9	—	3.7	—	—
3	9T51B0205	—	—	—	—	1.44
3	9T51B0107	—	4.2	—	8.3	—
3	9T51B0127	3.1	—	6.2	—	—
3	9T51B0207	—	—	—	—	2.4
3	9T51B0108	—	8.3	—	16.6	—
3	9T51B0128	6.2	—	12.5	—	—
3	9T51B0208	—	—	—	—	4.8
3	9T51B0109	—	12.5	—	25.0	—
3	9T51B0129	9.3	—	18.7	—	—
3	9T51B0209	—	—	—	—	7.2
3	9T51B0110	—	16.6	—	33.2	—
3	9T51B0130	12.5	—	25.0	—	—
3	9T51B0210	—	—	—	—	9.6
3	9T51B0111	—	25.0	—	50.0	—
3	9T51B0131	18.7	—	37.0	—	—
3	9T51B0211	—	—	—	—	14.4
3	9T51B0112	—	33.0	—	66.0	—
3	9T51B0132	25.0	—	50.0	—	—
3	9T51B0212	—	—	—	—	19.2
3	9T51B0113	—	50.0	—	100.0	—
3	9T51B0133	37.5	—	75.0	—	—
3	9T51B0213	—	—	—	—	28.8
3	9T21B1037G02	—	83.0	—	167.0	—
3	9T21B1040G02	62.0	—	125.0	—	—
Connection Diagram Page 10-60		F	F	G	G	F

¹The load kVA is the maximum load at voltages shown when transformers are connected as autotransformers according to the diagram referenced.

²See Caution page 10-58, footnote 1.



Dry Type Transformers Buck-Boost Selection Tables Encapsulated For Bucking and Boosting Voltage

Table 6
240 Volts, 3-Wire Output, 60 Hertz, Three-Phase²

Quantity Required Per Bank	Product Number	Available Line Voltage				
		189V/109	200V/115	208V/120 ³ 212V/122	218V/126	288V/166
						Load kVA ¹
3	9T51B0102	—	0.870	—	1.7	—
3	9T51B0122	0.650	—	1.3	—	—
3	9T51B0202	—	—	—	—	0.500
3	9T51B0103	—	1.3	—	2.6	—
3	9T51B0123	0.970	—	2.0	—	—
3	9T51B0203	—	—	—	—	0.750
3	9T51B0104	—	1.7	—	3.5	—
3	9T51B0124	1.3	—	2.6	—	—
3	9T51B0204	—	—	—	—	1.0
3	9T51B0105	—	2.6	—	5.2	—
3	9T51B0125	2.0	—	3.9	—	—
3	9T51B0205	—	—	—	—	1.5
3	9T51B0107	—	4.3	—	8.7	—
3	9T51B0127	3.2	—	6.5	—	—
3	9T51B0207	—	—	—	—	2.5
3	9T51B0108	—	8.7	—	17.3	—
3	9T51B0128	6.5	—	13.0	—	—
3	9T51B0208	—	—	—	—	5.0
3	9T51B0109	—	13.0	—	26.0	—
3	9T51B0129	9.7	—	19.5	—	—
3	9T51B0209	—	—	—	—	7.5
3	9T51B0110	—	17.3	—	34.6	—
3	9T51B0130	13.0	—	26.0	—	—
3	9T51B0210	—	—	—	—	10.0
3	9T51B0111	—	26.0	—	52.0	—
3	9T51B0131	19.5	—	39.0	—	—
3	9T51B0211	—	—	—	—	15.0
3	9T51B0112	—	35.0	—	70.0	—
3	9T51B0132	26.0	—	52.0	—	—
3	9T51B0212	—	—	—	—	20.0
3	9T51B0113	—	52.0	—	104.0	—
3	9T51B0133	39.0	—	78.0	—	—
3	9T51B0213	—	—	—	—	30.0
3	9T21B1037G02	—	87.0	—	173.0	—
3	9T21B1040G02	65.0	—	130.0	—	—
	Connection Diagram Page 10-60	F	F	G	G	F

¹The load kVA is the maximum load at voltages shown when transformers are connected as autotransformers according to the diagram referenced.

²See Caution page 10-58, footnote 1.

³When 208V/120 Volts is the available line voltage, the 212V/122 column may be used to obtain 236 Volts which should be satisfactory for most applications.



Dry Type Transformers Buck-Boost Selection Tables Encapsulated For Bucking and Boosting Voltage

Section 10

Table 7

460 Volts, 3-Wire Output, 60 Hertz, Three-Phase¹

Quantity Required Per Bank	Product Number	Available Line Voltage — 3- or 4-Wire				
		385	406	418	432	438
		Load kVA ²				
3	9T51B0102	—	—	1.66	—	3.32
3	9T51B0122	—	1.25	—	2.49	—
3	9T51B0202	0.830	—	—	—	—
3	9T51B0103	—	—	2.48	—	4.96
3	9T51B0123	—	1.87	—	3.73	—
3	9T51B0203	1.2	—	—	—	—
3	9T51B0104	—	—	3.31	—	6.62
3	9T51B0124	—	2.49	—	4.97	—
3	9T51B0204	1.7	—	—	—	—
3	9T51B0105	—	—	4.97	—	9.94
3	9T51B0125	—	3.73	—	3.9	—
3	9T51B0205	2.5	—	—	—	—
3	9T51B0107	—	—	8.28	—	16.6
3	9T51B0127	—	6.22	—	6.5	—
3	9T51B0207	4.2	—	—	—	—
3	9T51B0108	—	—	16.6	—	33.2
3	9T51B0128	—	12.5	—	13.0	—
3	9T51B0208	8.3	—	—	—	—
3	9T51B0109	—	—	24.8	—	59.6
3	9T51B0129	—	18.7	—	19.5	—
3	9T51B0209	12.5	—	—	—	—
3	9T51B0110	—	—	33.1	—	66.2
3	9T51B0130	—	24.9	—	26.0	—
3	9T51B0210	16.6	—	—	—	—
3	9T51B0111	—	—	49.7	—	99.4
3	9T51B0131	—	37.3	—	39.0	—
3	9T51B0211	24.9	—	—	—	—
3	9T51B0112	—	—	66.3	—	133.0
3	9T51B0132	—	49.7	—	52.0	—
3	9T51B0212	33.2	—	—	—	—
3	9T51B0113	—	—	99.3	—	198.6
3	9T51B0133	—	74.6	—	78.0	—
3	9T51B0213	49.8	—	—	—	—
3	9T21B1037G02	—	—	166.0	—	322.0
3	9T21B1040G02	—	125.0	—	130.0	—
Connection Diagram Page 10-60		F	H	H	I	I

¹Caution: If input is 3-wire Delta or 4-wire midtapped Delta, the neutral established from the bank of buck-boost transformers must be insulated and isolated from the input power neutral and/or ground.

²The load kVA is the maximum load at voltages shown when transformers are connected as autotransformers according to the diagram referenced.



Dry Type Transformers Buck-Boost Selection Tables Encapsulated

For Bucking and Boosting Voltage

Table 8

480 Volts, 3-Wire Output, 60 Hertz, Three-Phase¹

Quantity Required Per Bank	Product Number	Available Line Voltage — 3- or 4-Wire			
		400	424	436	450
		Load kVA ²			
3	9T51B0102	—	—	1.74	—
3	9T51B0122	—	1.3	—	2.6
3	9T51B0202	0.866	—	—	—
3	9T51B0103	—	—	2.6	—
3	9T51B0123	—	1.95	—	3.9
3	9T51B0203	1.3	—	—	—
3	9T51B0104	—	—	3.5	—
3	9T51B0124	—	2.6	—	5.2
3	9T51B0204	1.7	—	—	—
3	9T51B0105	—	—	5.2	—
3	9T51B0125	—	3.9	—	7.8
3	9T51B0205	2.6	—	—	—
3	9T51B0107	—	—	8.7	—
3	9T51B0127	—	6.3	—	13.0
3	9T51B0207	4.3	—	—	—
3	9T51B0108	—	—	17.4	—
3	9T51B0128	—	13.0	—	26.0
3	9T51B0208	8.7	—	—	—
3	9T51B0109	—	—	26.0	—
3	9T51B0129	—	19.5	—	39.0
3	9T51B0209	13.0	—	—	—
3	9T51B0110	—	—	35.0	—
3	9T51B0130	—	26.0	—	52.0
3	9T51B0210	17.3	—	—	—
3	9T51B0111	—	—	52.2	—
3	9T51B0131	—	39.0	—	78.0
3	9T51B0211	26.0	—	—	—
3	9T51B0112	—	—	69.0	—
3	9T51B0132	—	52.0	—	104.0
3	9T51B0212	34.6	—	—	—
3	9T51B0113	—	—	104.0	—
3	9T51B0133	—	78.0	—	156.0
3	9T51B0213	51.9	—	—	—
3	9T21B1037G02	—	—	174.0	—
3	9T21B1040G02	—	130.0	—	260.0
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Table 9

208 Volts, 3-Wire, 60 Hertz, Three-Phase¹

Quantity Required Per Bank	Product Number	Available Line Voltage — 3- or 4-Wire			
		218	222	229	236
		Load kVA ²			
2	9T51B0102	1.6	—	0.800	—
2	9T51B0122	—	1.2	—	0.640
2	9T51B0103	2.3	—	1.2	—
2	9T51B0123	—	1.8	—	0.960
2	9T51B0104	3.2	—	1.6	—
2	9T51B0124	—	2.4	—	1.3
2	9T51B0105	4.7	—	2.5	—
2	9T51B0125	—	3.6	—	1.9
2	9T51B0107	7.8	—	4.1	—
2	9T51B0127	—	6.0	—	3.2
2	9T51B0108	16	—	8.0	—
2	9T51B0128	—	12.0	—	6.4
2	9T51B0109	23.6	—	12.4	—
2	9T51B0129	—	18.0	—	9.6
2	9T51B0110	31.5	—	16.5	—
2	9T51B0130	—	24.0	—	12.7
2	9T51B0111	47.5	—	24.8	—
2	9T51B0131	—	36.0	—	19.1
2	9T51B0112	63.0	—	33.0	—
2	9T51B0132	—	48.0	—	25.6
2	9T51B0113	94	—	49.6	—
2	9T51B0133	—	72.0	—	38.3
	Connection Diagram Page 10-60	J	J	Z	Z

¹**Caution:** If input is 3-wire Delta or 4-wire midtapped Delta, the neutral established from the bank of buck-boost transformers must be insulated and isolated from the input power neutral and/or ground.

²The load kVA is the maximum load at voltages shown when transformers are connected as autotransformers according to the diagram referenced.

