Distribution Dry Type Transformers

Sentron Power Centers

Selection

Bolt-in Breaker Option

The same economical space saving package, NEMA 3R rated enclosure, and UL listed transformer of the original Sentron Power Center but now available with more robust BOLT-IN BREAKERS.

Panel Assembly

This version of the Sentron Power Center uses our UL Recognized P1 Lighting Panel interior with the following ratings & features:

- 200 kA Short Circuit rating
- 240 Volts maximum (when using type BL branch devices)
- 250 Amps maximum
- Copper bus
- 18 circuit panel for 15kVA and below
- 30 circuit panel for designs above 15kVA

The power panel assembly will accommodate one-inch, 1, 2, or 3-pole type BL, BLH, HBL branch Breakers, to include the BL family of AFCI, GFCI, Ground Fault, Switching Neutrals, HID Lighting, Tungsten Lighting, and Molded Case Switches.

The Sentron Power Center assembly comes fully equipped with transformer primary and secondary main circuit breakers. Branch circuit breakers can be obtained from our local distributor once you have established your branch circuit requirements. All Sentron Power Centers are UL listed for service entrance applications.

Voltage rating: 480 - 240/120, Single Phase, Sentron Power Center

kVA	Catalog Number③	Maximum Secondary Circuits①		Interior Part Number	Approximate Dimensions (inches)			Approximate Weight (lbs.)
		1" Wide	2" Wide		Height	Width	Depth	
5	**1LPC005J**	16	8	**12-B-3025-07**	38.00	15.88	11.00	165
7.5	**1LPC007J**	16	8	**12-B-3025-07**	38.00	15.88	11.00	165
10	**1LPC010J**	16	8	**12-B-3025-07**	34.38	17.13	12.38	240
15	**1LPC015J**	16	8	**12-B-3025-07**	34.38	17.13	12.38	240
25	**1LPC025J**	28	14	**12-B-3025-09**	41.88	17.88	13.50	330

Voltage rating: 480 Delta - 208Y/120, Three Phase, Sentron Power Center

kVA	Catalog Number③	Maximum Secondary Circuits②		Interior Part Number	Approximate Dimensions (inches)			Approximate Weight (pounds)
		1" Wide	2" Wide		Height	Width	Depth	
9	**3LPC009J**	15	7	**12-B-3025-08**	33.75	22.13	7.63	255
15	**3LPC015J**	15	7	**12-B-3025-08**	35.13	22.13	12.38	385
22.5	**3LPC022J**	27	13	**12-B-3025-10**	43.75	33.00	13.75	680
30	**3LPC030J**	27	13	**12-B-3025-10**	43.75	33.00	13.75	680

Circuit Breaker Data for Sentron Power Centers

For Single Phase Sentron Power Centers

kVA	Transformer Primary Breaker	Panel Secondary Main Breaker	Maximum rating of Branch Breakers (Amps)
5	ED42B025L (25A)	B230H (30A)	20
7.5	ED42B025L (25A)	B240H (40A)	30
10	ED42B035L (35A)	B250H (50A)	40
15	ED42B050L (50A)	B270 (70A)	60
25	ED42B090L (90A)	B2125 (125A)	100

For Three Phase Sentron Power Centers

kVA	Transformer Primary Breaker	Panel Secondary Main Breaker	Maximum rating of Branch Breakers (Amps)
9	ED43B025L (25A)	B330H (30A)	25
15	ED43B040L (40A)	B350H (50A)	40
22.5	ED43B070L (70A)	B370 (70A)	60
30	ED43B050L (90A)	B3100 (100A)	80

① Excluding Secondary Main Breaker that takes up 2 poles.
② Excluding Secondary Main Breaker that takes up 3 poles.
③ For stainless steel, add "SS" to the end of the part number.

DOE 2016 Efficiency Standards

The Department of Energy (DOE) 10 CFR 431 has released new efficiency standards which will be put into effect January 1, 2016. These standards surpass and supersede NEMA TP1 efficiency standards. All low voltage dry-type three-phase ventilated transformers from 15 kVA through 1000kVA must be manufactured to these standards after January 1, 2016. DOE 2016 standards also apply to Harmonic Mitigating Transformers (See page 8-19 – 8-20).

Transformers manufactured to DOE 2016 efficiencies must meet efficiency levels with a 35% load and temperature of 75oC. Transformers with DOE 2016 standards may have higher grade steels, different style of core, and may be of different size and weight. DOE 2016 standards do not apply to single phase, encapsulated, motor drive isolation, and auto transformers.

High Efficiency Transformers

Single Phase		Three Phase	
kVA	TP1 Efficiency	kVA	DOE 2016 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%

NEMA TP1 Efficiency Standards

NEMA TP1 will still be a valid efficiency standard for single phase transformers after January 1, 2016. The TP1 designs use high grade electrical steel and other features to lower flux density and reduce losses especially at average 35% loading where the TP1 measurements apply. The core construction employs the use of high quality non-aging electrical grade silicon steel with high permeability, low hysteresis, and low eddy current losses. These characteristics are required to achieve the TP1 efficiency levels. Core laminations must be tightly assembled enabling magnetic flux densities to be kept well below the saturation point.

• Revised •
10/20/15

Sentron Harmonic Mitigating Transformers (HD1)

Selection

Description

The Sentron Harmonic Mitigating Transformers (HMTs) are designed to meet the needs of modern power distribution systems that contain a large percentage of non-linear equipment that produces harmonics. Some examples of this type of equipment are computers, printers, fax machines, scanners, copiers, uninterruptible power supplies, ballast and variable frequency drives (VFD). This type of equipment generates harmonic voltages and currents because they contain AC to DC power conversion rectifiers. Harmonic voltages and currents can cause a variety of problems ranging from poor power factor, voltage distortion, capacitor resonance and motor failures to overloaded transformers and conductors.

The Sentron HMTs are specially designed to operate under high non-linear load conditions and have the additional benefit of improving the overall power system reliability.

Application

One of the most effective ways to eliminate power system harmonics is to use a technique known as "phase shifting." In this method power system harmonics are eliminated by pairing together harmonics that have 180° relative angular displacement, which causes them to cancel one another out. This can be accomplished by a variety of means:

Single Output Harmonic Mitigating Transformer (0° or -30° primary-secondary angular displacement)

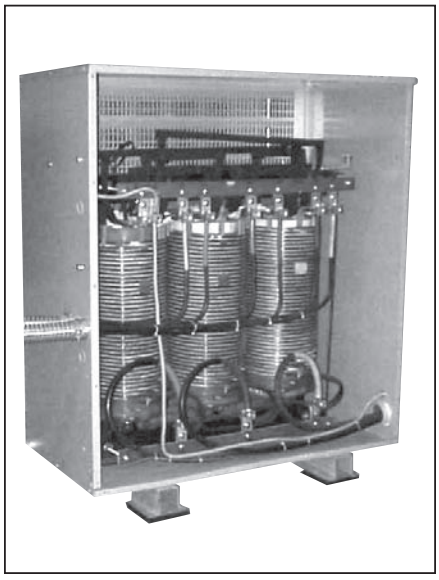
- The primary of this transformer has a delta connection and its secondary has a special double winding connection. Although there is only one secondary three phase output, the 3rd, 9th and 15th harmonic currents are prevented from circulating in the primary windings by canceling their magnetic fluxes at low impedance with the double winding secondary, reducing voltage distortions to the loads.
- When two transformers with this type of connection, 0° and -30° displacement, are used in parallel, the 3rd, 9th and 15th harmonic currents are canceled as previously described, and additionally the 5th and 7th harmonic currents are cancelled in the electrical supply common to both transformers due to their relative 30° phase shift.
- If a single harmonic mitigating transformer (0°) is used in an existing or new system utilizing standard delta-wye transformers (-30°), the 5th and 7th harmonic currents originating from the HMT transformer (0°) will attempt to cancel the 5th and 7th harmonic currents originating from the standard delta-wye transformer (-30°). This reduces the overall 5th and 7th harmonics present in the system, with the actual reduction dependent on the magnitudes of the secondary loads.

Benefits

Elimination of undesirable harmonics by using the Siemens Sentron HMTs is an effective solution to the power quality problems encountered by today's power system professionals. By treating the harmonics at their source, using advanced technology, installation problems can be avoided and overall system reliability improved. The Sentron HMT product line provides many far reaching benefits such as lower operating cost, improved operating efficiency, reduced down-time due to outages caused by nuisance tripping, and increased equipment life due to low voltage distortions.

Design and Construction Features

The Sentron Harmonic Mitigating Transformers comply with all applicable ANSI/IEEE standards including C57.12.91, C57.96, C57.110, CSA # C22.2 No. 47 (CUL), UL506, UL1561 as well as NEMA ST-20. The design life is 25 years at 150 degree C rise, 30 years at 115C rise and 40 years for 80C rise models. Approvals and listings include UL, CSA. with CE approval available when requested. The Sentron HMTs have capability up to the load capability up to K-20, which is achieved by harmonic cancellations in the secondary and low flux density design for protection against heat in place of design enlargement protection only. Both copper and aluminum coil windings are available and full width copper foil electrostatic shield is standard. Additional shield options are available for higher noise attenuation requirements. All HMTs have 150C rise with optional 130C, 115C and 80C winding rise designs available. All designs include vacuum impregnated polyester resin encapsulation of windings and NEMA 3R enclosures. A neutral sized at 200% of the ampacity of the secondary phase conductors for extra protection against triplens and unbalanced single phase loads. The Sentron HMT designs have DOE 2016 energy efficient rating equal to that of a non K-Factor rated transformer. Siemens HMT designs have DOE 2016 efficiency levels at 35% load @ ref temp. 75 degree C.



Transformers

Sentron Harmonic Mitigating Transformers (HD1)

Selection

Catalog Number Coding:

Single output (1 secondary) = HD1,
Phase Shift Options: HD1 followed by > (00) or (30) degree.
HMT, 480 Volt Primary 208Y/120 Volt Secondary (3F3)–150C (standard), 115C and 80C Winding Rise displayed on this page.
HMTs are also available with 480–480Y/277 (3F5), 208–208Y/120 (3B3), 208–480Y/277 (3B5).

Standard Features Include:

- K-20 Load profile rating.
- DOE 2016 Efficiencies at 35% load.
- (C) Copper windings or Aluminum windings (no suffix code).
- (ES) Electrostatic shield.
- 150 C Winding rise.
  Changes after January 1, 2016: 2 output, 15 & 45 deg Lag & 130 deg C temp rise will no longer be standard. They can be provided with a special quote from MAP.

kVA	150C (Std) Rise HMT Catalog Number①	115C Rise HMT Catalog Number①	80C Rise HMT Catalog Number①	Secondary Configuration		Enclosure Style	Optional HMT Modifications
				Outputs	Phase Shift		
15	**3F3Y015CHD100**	**3F3Y015FCHD100**	**3F3Y015BCHD100**	1	Zero Degree	Vented	A,B,C,D,E,F,G
15	**3F3Y015CHD130**	**3F3Y015FCHD130**	**3F3Y015BCHD130**	1	30 Deg Lagging	Vented	A,B,C,D,E,F,G
30	**3F3Y030CHD100**	**3F3Y030FCHD100**	**3F3Y030BCHD100**	1	Zero Degree	Vented	A,B,C,D,E,F,G
30	**3F3Y030CHD130**	**3F3Y030FCHD130**	**3F3Y030BCHD130**	1	30 Deg Lagging	Vented	A,B,C,D,E,F,G
45	**3F3Y045CHD100**	**3F3Y045FCHD100**	**3F3Y045BCHD100**	1	Zero Degree	Vented	A,B,C,D,E,F,G
45	**3F3Y045CHD130**	**3F3Y045FCHD130**	**3F3Y045BCHD130**	1	30 Deg Lagging	Vented	A,B,C,D,E,F,G
75	**3F3Y075CHD100**	**3F3Y075FCHD100**	**3F3Y075BCHD100**	1	Zero Degree	Vented	A,B,C,D,E,F,G
75	**3F3Y075CHD130**	**3F3Y075FCHD130**	**3F3Y075BCHD130**	1	30 Deg Lagging	Vented	A,B,C,D,E,F,G
112.5	**3F3Y112CHD100**	**3F3Y112FCHD100**	**3F3Y112BCHD100**	1	Zero Degree	Vented	A,B,C,D,E,F,G
112.5	**3F3Y112CHD130**	**3F3Y112FCHD130**	**3F3Y112BCHD130**	1	30 Deg Lagging	Vented	A,B,C,D,E,F,G
150	**3F3Y150CHD100**	**3F3Y150FCHD100**	**3F3Y150BCHD100**	1	Zero Degree	Vented	A,B,C,D,E,F,G
150	**3F3Y150CHD130**	**3F3Y150FCHD130**	**3F3Y150BCHD130**	1	30 Deg Lagging	Vented	A,B,C,D,E,F,G
225	**3F3Y225CHD100**	**3F3Y225FCHD100**	**3F3Y225BCHD100**	1	Zero Degree	Vented	A,B,C,D,E,F,G
225	**3F3Y225CHD130**	**3F3Y225FCHD130**	**3F3Y225BCHD130**	1	30 Deg Lagging	Vented	A,B,C,D,E,F,G
300	**3F3Y300CHD100**	**3F3Y300FCHD100**	**3F3Y300BCHD100**	1	Zero Degree	Vented	A,B,C,D,E,F,G
300	**3F3Y300CHD130**	**3F3Y300FCHD130**	**3F3Y300BCHD130**	1	30 Deg Lagging	Vented	A,B,C,D,E,F,G
500	**3F3Y500CHD100**	**3F3Y500FCHD100**	**3F3Y500BCHD100**	1	Zero Degree	Vented	C,D,E,F,G
500	**3F3Y500CHD130**	**3F3Y500FCHD130**	**3F3Y500BCHD130**	1	30 Deg Lagging	Vented	C,D,E,F,G

Optional Modifications Table for HMTs

Sound Level

A LN3= (3dB below NEMA standard)
B LN5= (5dB below NEMA standard)

Attenuation—Single shield—60dB Common Mode Std.

C ES2= Double shield—80dB Common Mode > ②

Filtering & Attenuation

E TV= Secondary side TVSS (100kA & 200kA available) with common mode noise attenuation
F TB= Terminal Block

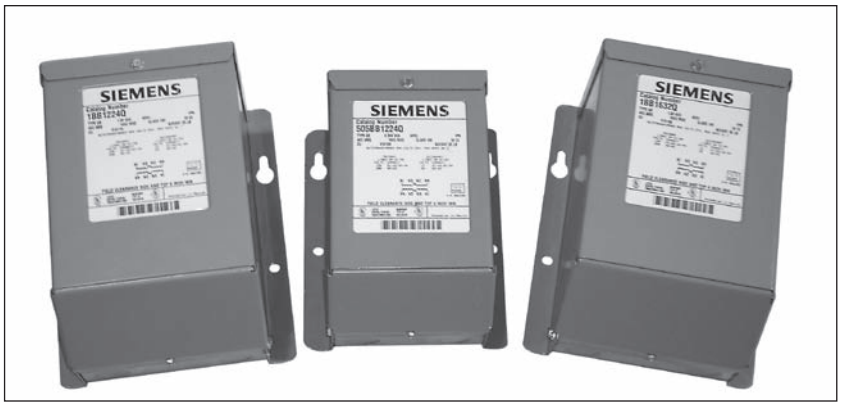
Thermal Sensors 170° C= (TS7), 185° C= (TS8) or 200° C= (TS0)

G TS7 = 1 sensor center coil
G TS72 = 2 sensors center coil
G TS76 = 6 sensors, (2) on each coil
G TS8 = 1 sensor center coil
G TS82 = 2 sensors center coil
G TS86 = 6 sensors, (2) on each coil
G TS0 = 1 sensor center coil
G TS02 = 2 sensors center coil
G TS06 = 6 sensors, (2) on each coil

① Contact Sales Office for pricing.

② ES2
Common Mode:
100dB: Between 60 Hz – 1 kHz
90 dB: Between 1 kHz – 10 kHz
80dB: Between 10 kHz – 1000 kHz

Transverse Mode:
10dB: @ 10kHz
20dB: @ 100 kHz
40db: @ 1000 kHz



Buck-Boost Application Description and Selection

The Buck-Boost Transformer has four separate windings, two-windings in the primary and two-windings in the secondary. The unit is designed for use as an insulating transformer or as an autotransformer. As an autotransformer the unit can be connected to Buck (decrease) or Boost (increase) a supply voltage. When connected in either the Buck or Boost mode, the unit is no longer an insulating transformer but is an autotransformer. Units are designed for 60Hz applications (50Hz units available upon request).

Autotransformers are more economical and physically smaller than equivalent two-winding transformers and are designed to carry the same function as two-winding transformers, with the exception of isolating two circuits. Since autotransformers may transmit line disturbances directly, they may be prohibited in some areas by local building codes. Before applying them, care should be taken to assure that they are acceptable according to local code.

NOTE: Autotransformers are not used in closed delta connections as they introduce into the circuit a phase shift which makes them uneconomical.

As insulating transformers these units can accommodate a high voltage of 120, 240 or 480 volts. For units with two 12 volt secondaries, two 16 volt secondaries, or two 24 volt secondaries, the output can be wired for either secondary voltage, or for 3-wire secondary. The unit is rated (kVA) as any conventional transformer.

Operation

Electrical and electronic equipment is designed to operate on a standard supply voltage. When the supply voltage is constantly too high or too low, (usually greater than ± 5%), the equipment fails to operate at maximum efficiency. A Buck-Boost transformer is a simple and economical means of correcting this off-standard voltage up to ± 20%. A Buck-Boost transformer will NOT, however, stabilize a fluctuating voltage. Buck-Boost transformers are suitable for use in a three phase autotransformer bank in either direction to supply 3-wire loads. They are also suitable for use in a three phase autotransformer bank which provides a neutral return for unbalanced current. They are NOT suitable for use in a three phase autotransformer bank to supply a 4-wire unbalanced load when the source is a 3-wire circuit.

Construction

Buck-Boost Transformers are contained within a NEMA 3R, non-ventilated weatherproof enclosure. Wiring compartments are located at the bottom. Core and coil assemblies are encapsulated. Insulation system temperature is 130° C and the widing temperature rise is 95° C for units up through 1 kVA. Insulation system temperature is 180° C and the winding temperature rise is 135° C for units 1.5 kVA and above.

How To Select The Proper Transformer

To select the proper Transformer for Buck-Boost applications, determine:

1. Input line voltage — The voltage that you want to buck (decrease) or boost (increase). This can be found by measuring the supply line voltage with a voltmeter.
2. Load voltage — The voltage at which your equipment is designed to operate. This is listed on the nameplate of the load equipment.
3. Load kVA or Load Amps — You do not need to know both — one or the other is sufficient for selection purposes. This information usually can be found on the nameplate of the equipment that you want to operate.
4. Number of phases — Single or three phase line and load should match because a transformer is not capable of converting single to three phase. It is however a common application to make a single phase transformer connection from a three phase supply by use of one leg of the three phase supply circuit. Care must always be taken not to overload the leg of the three phase supply. This is particularly true in a Buck-Boost application because the supply must provide for the load kVA, not just the nameplate rating of the Buck-Boost transformer.
5. Frequency — The supply line frequency must be the same as the frequency of the equipment to be operated — either 50 or 60 cycles.

How To Use Selection Charts

1. Choose the selection table with the correct number of phases for single or three phase applications.
2. Line/Load voltage combinations are listed across the top of the selection table. Select a line/load voltage combination which comes closest to matching your applications.
3. Follow the selected column down until you find either the kVA or load amps of your application. If you do not find the exact value, go on the next highest rating.
4. Now follow across the table to the far left-hand side to find the catalog number and the kVA of the transformer you need.
5. Follow the column of your line/load voltage to the bottom to find the connection diagram for this application.
   NOTE: Connection diagrams show low voltage and high voltage connection terminals. Either can be input or output depending on Buck or Boost application.
6. In the case of three phase loads either two or three single phase transformers are required as indicated in the "quantity required" line at the bottom of the table. The selection is dependent on whether a Wye connected bank of three transformers with a neutral is required or whether an open Delta connected bank of two ransformers for a Delta connected load will be suitable.
7. For line/load voltage not listed on the selection tables, use the pair listed on the table that is slightly above your application for reference. Then apply the first formula at the bottom of the table to determine "new" output voltage. The new kVA rating can be found using the second formula.

Warehouse Stock Transformers

Buck-Boost

120 × 240 Volts Primary — 12/24 Volts Secondary, 60 Hz, No Taps, Wall Mounted

Single Phase — Table 1			Boosting								Bucking					
Catalog Number*	Line Voltage (Available)		96	100	105	109	189	208	215	220	125	132	229	245	250	252
Insulating Transformer Rating	Load Voltage (Output)		115	120	115	120	208	229	237	242	114	120	208	222	227	240
050BB1224J		kVA	.24	.25	.50	.50	.43	.48	.49	.50	.52	.55	.48	.51	.52	1.05
.050 kVA	Load	Amps	2.08	2.08	4.17	4.17	2.08	2.08	2.08	2.08	4.59	4.59	2.29	2.29	2.29	4.38
100BB1224J		kVA	.48	.50	.96	1.00	.87	.95	.99	1.01	1.04	1.10	.95	1.02	1.04	2.10
.100 kVA	Load	Amps	4.17	4.17	8.33	8.33	4.17	4.17	4.17	4.17	9.16	9.16	4.58	4.58	4.58	8.75
150BB1224J		kVA	.72	.75	1.44	1.50	1.30	1.43	1.48	1.51	1.55	1.65	1.43	1.53	1.56	3.15
.150 kVA	Load	Amps	6.25	6.25	12.50	12.50	6.25	6.25	6.25	6.25	13.75	13.75	6.88	6.88	6.88	13.13
205BB1224J		kVA	1.19	1.25	2.40	2.50	2.17	2.38	2.47	2.52	2.60	2.75	2.38	2.54	2.60	5.25
.250 kVA	Load	Amps	10.42	10.42	20.83	20.83	10.42	10.42	10.42	10.42	22.92	22.92	11.46	11.46	11.46	21.88
505BB1224J		kVA	2.37	2.50	4.80	5.00	4.33	4.77	4.94	5.04	5.18	5.50	4.77	5.09	5.20	10.50
.500 kVA	Load	Amps	20.83	20.83	41.67	41.67	20.83	20.83	20.83	20.83	45.83	45.83	22.92	22.92	22.92	43.75
705BB1224J		kVA	3.56	3.75	7.19	7.50	6.50	7.15	7.41	7.56	7.77	8.25	7.15	7.63	7.80	15.75
.750 kVA	Load	Amps	31.25	31.25	62.50	62.50	31.25	31.25	31.25	31.25	68.75	68.75	34.38	34.38	34.38	65.63
1BB1224J		kVA	4.75	5.00	9.58	10.00	8.67	9.53	9.88	10.08	10.36	11.00	9.53	10.17	10.40	21.00
1.00 kVA	Load	Amps	41.67	41.67	83.33	83.33	41.67	41.67	41.67	41.67	91.66	91.66	45.83	45.83	45.83	87.50
105BB1224J		kVA	7.13	7.50	14.38	15.00	13.00	14.30	14.81	15.13	15.54	16.50	14.30	15.26	15.61	31.50
1.50 kVA	Load	Amps	62.50	62.50	125.00	125.00	62.50	62.50	62.50	62.50	137.50	137.50	68.75	68.75	68.75	131.25
2BB1224J		kVA	9.50	10.00	19.17	20.00	17.33	19.07	19.75	20.17	20.72	22.00	19.07	20.35	20.81	42.00
2.00 kVA	Load	Amps	83.33	83.33	166.66	166.66	83.33	83.33	83.33	83.33	183.33	183.33	91.66	91.66	91.66	175.00
3BB1224J		kVA	14.25	15.00	28.75	30.00	26.00	28.60	29.63	30.25	31.08	33.00	28.60	30.53	31.21	63.00
3.00 kVA	Load	Amps	125.00	125.00	250.00	250.00	125.00	125.00	125.00	125.00	275.00	275.00	137.50	137.50	137.50	262.50
5BB1224J		kVA	23.75	25.00	47.92	50.00	43.33	47.67	49.37	50.42	51.79	55.00	47.67	50.88	52.02	105.00
5.00 kVA	Load	Amps	208.33	208.33	416.66	416.66	208.33	208.33	208.33	208.33	458.33	458.33	229.17	229.17	229.17	437.50
Connection Diagram (pg. 8-25)			B	B	A	A	D	D	D	D	D	A	D	D	D	C

Three Phase — Table 2			Boosting									Bucking				
Catalog Number*	Line Voltage (Available)		189Y/ 109	195Y/ 113	200Y/ 115	208Y/ 120	416Y/ 240	416Y/ 240	189	208	220	218	229	250	255	264
Insulating Transformer Rating	Load Voltage (Output)		208Y/ 120	234Y/ 135	240Y/ 139	229Y/ 132	458Y/ 264	437Y/ 252	208	229	242	208	208	227	232	240
050BB1224J		kVA	1.50	.84	.86	1.65	1.65	3.15	.75	.83	.87	1.58	.83	.90	.92	.95
.050 kVA	Load	Amps	4.17	2.08	2.08	4.17	2.08	4.17	2.08	2.08	2.08	4.39	2.29	2.29	2.29	2.29
100BB1224J		kVA	3.00	1.69	1.73	3.30	3.30	6.29	1.50	1.65	1.75	3.15	1.65	1.80	1.84	1.90
.100 kVA	Load	Amps	8.33	4.17	4.17	8.33	4.17	8.33	4.17	4.17	4.17	8.75	4.58	4.58	4.58	4.58
150BB1224J		kVA	4.50	2.54	2.60	4.96	4.96	9.44	2.26	2.48	2.62	4.73	2.48	2.71	2.76	2.86
.150 kVA	Load	Amps	12.50	6.25	6.25	12.50	6.25	12.50	6.25	6.25	6.25	13.13	6.88	6.88	6.88	6.88
205BB1224J		kVA	7.50	4.22	4.33	8.30	8.25	15.75	3.75	4.13	4.37	7.88	4.13	4.50	4.61	4.76
.250 kVA	Load	Amps	20.83	10.42	10.42	20.83	10.42	20.83	10.42	10.42	10.42	21.88	11.46	11.46	11.46	11.46
505BB1224J		kVA	15.01	8.44	8.66	16.60	16.50	31.50	7.50	8.26	8.73	15.76	8.26	9.01	9.21	9.53
.500 kVA	Load	Amps	41.67	20.83	20.83	41.67	20.83	41.67	20.83	20.83	20.83	43.75	22.92	22.92	22.92	22.92
705BB1224J		kVA	22.52	12.67	12.99	24.90	24.75	47.25	11.26	12.39	13.10	23.64	12.39	13.52	13.82	14.29
.750 kVA	Load	Amps	62.50	31.25	31.25	62.50	31.25	62.50	31.25	31.25	31.25	65.63	34.38	34.38	34.38	34.38
1BB1224J		kVA	30.02	16.89	17.32	33.20	33.00	63.00	15.01	16.51	17.47	31.52	16.51	18.02	18.42	19.05
1.00 kVA	Load	Amps	83.33	41.67	41.67	83.33	41.67	83.33	41.67	41.67	41.67	87.50	45.83	45.83	45.83	45.53
105BB1224J		kVA	45.03	25.33	25.98	49.80	49.50	94.50	22.52	24.77	26.20	47.28	24.77	27.03	27.63	28.53
1.50 kVA	Load	Amps	125.00	62.50	62.50	125.00	62.50	125.00	62.50	62.50	62.50	131.25	68.75	68.75	68.75	68.75
2BB1224J		kVA	60.06	33.77	34.64	66.40	66.00	126.00	30.02	33.03	34.93	63.05	33.03	36.04	36.84	38.11
2.00 kVA	Load	Amps	166.67	83.33	83.33	166.67	83.33	166.66	83.33	83.33	83.33	175.00	91.67	91.67	91.67	91.67
3BB1224J		kVA	90.07	50.66	51.96	99.59	99.00	189.00	45.03	49.54	52.39	94.57	49.54	54.06	55.25	57.16
3.00 kVA	Load	Amps	250.00	125.00	125.00	250.00	125.00	250.00	125.00	125.00	125.00	262.50	137.50	137.50	137.50	137.50
5BB1224J		kVA	150.11	84.44	86.60	165.99	165.00	318.00	75.05	82.56	87.32	157.62	82.56	90.10	92.09	95.26
5.00 kVA	Load	Amps	416.67	208.33	208.33	416.67	208.33	416.66	208.33	208.33	208.33	437.50	229.17	229.17	229.17	229.17
Quantity Required			3	3	3	3	3	3	2	2	2	2	2	2	2	2
Connection Diagram (pg. 8-25)			F	E	E	F	J	K	G	G	G	H	G	G	G	G

* All Buck-Boost transformers listed are available for immediate shipment.

- Output voltage for lower input voltage can be found by: $\frac{\text{Rated Output Voltage}}{\text{Rated Input Voltage}}$ × Input Actual Voltage = Output New Voltage.
- Output kVA available at reduced input voltage can be found by: $\frac{\text{Actual Input Voltage}}{\text{Rated Input Voltage}}$ × Output kVA = New kVA Rating.
- Inputs and outputs may be reversed without affecting kVA capacity. See note on page 8-25

Warehouse Stock Transformers

Buck-Boost

120 × 240 Volts Primary — 16/32 Volts Secondary, 60 Hz, No Taps, Wall Mounted

Single Phase — Table 3			Boosting								Bucking					
Catalog Number*	Line Voltage (Available)		95	100	105	208	215	215	220	225	135	240	240	245	250	255
Insulating Transformer Rating	Load Voltage (Output)		120	113	119	236	244	229	235	240	120	212	225	230	234	239
050BB1632J		kVA	.19	.36	.37	.37	.38	.72	.73	.73	.42	.37	.75	.77	.78	.80
.050 kVA	Load	Amps	1.56	3.12	3.12	1.56	1.56	3.12	3.12	3.12	3.54	1.77	3.33	3.33	3.33	3.33
100BB1632J		kVA	.38	.72	.74	.74	.76	1.44	1.46	1.50	.84	.74	1.50	1.54	1.56	1.60
.100 kVA	Load	Amps	3.13	6.25	6.25	3.13	3.13	6.25	6.25	6.25	7.09	3.54	6.66	6.66	6.66	6.66
150BB1632J		kVA	.56	1.06	1.12	1.12	1.14	2.16	2.20	2.26	1.26	1.10	2.26	2.30	2.34	2.40
.150 kVA	Load	Amps	4.69	9.38	9.38	4.69	4.69	9.38	9.38	9.38	10.64	5.30	10.02	10.02	10.02	10.02
205BB1632J		kVA	.94	1.78	1.86	1.88	1.91	3.59	3.67	3.75	2.11	1.84	3.75	3.83	3.90	3.98
.250 kVA	Load	Amps	7.81	15.63	15.63	7.81	7.81	15.63	15.63	15.63	17.71	8.85	16.67	16.67	16.67	16.67
505BB1632J		kVA	1.88	3.56	3.72	3.75	3.81	7.19	7.34	7.50	4.21	3.68	7.50	7.67	7.80	7.97
.500 kVA	Load	Amps	15.63	31.25	31.25	15.63	15.63	31.25	31.25	31.25	35.42	17.71	33.33	33.33	33.33	33.33
705BB1632J		kVA	2.81	5.34	5.58	5.63	5.72	10.78	11.02	11.25	6.32	5.53	11.25	11.50	11.70	11.95
.750 kVA	Load	Amps	23.44	46.88	46.88	23.44	23.44	46.88	46.88	46.88	53.13	26.56	50.00	50.00	50.00	50.00
1BB1632J		kVA	3.75	7.13	7.44	7.50	7.63	14.38	14.69	15.00	8.43	7.37	15.00	15.33	15.60	15.93
1.00 kVA	Load	Amps	31.25	62.50	62.50	31.25	31.25	62.50	62.50	62.50	70.83	35.42	66.67	66.67	66.67	66.67
105BB1632J		kVA	5.63	10.69	11.16	11.25	11.44	21.56	22.03	22.50	12.64	11.05	22.50	23.00	23.40	23.90
1.50 kVA	Load	Amps	43.90	93.80	93.80	46.90	46.90	93.80	93.80	93.80	106.30	53.10	100.00	100.00	100.00	100.00
2BB1632J		kVA	7.50	14.25	14.88	15.00	15.25	28.75	29.38	30.00	16.86	14.73	30.00	30.67	31.20	31.87
2.00 kVA	Load	Amps	62.50	125.00	125.00	62.50	62.50	125.00	125.00	125.00	141.70	70.80	133.30	133.30	133.30	133.30
3BB1632J		kVA	11.25	21.38	22.31	22.50	22.88	43.13	44.06	45.00	25.29	22.10	45.00	46.00	46.80	47.80
3.00 kVA	Load	Amps	93.80	187.50	187.50	93.80	93.80	187.50	187.50	187.50	212.50	106.30	200.00	200.00	200.00	200.00
5BB1632J		kVA	18.75	35.63	37.19	37.50	38.13	71.88	73.44	75.00	42.15	36.83	75.00	76.67	78.00	79.67
5.00 kVA	Load	Amps	156.30	312.50	312.50	156.30	156.30	312.50	312.50	312.50	354.20	177.10	333.30	333.30	333.30	333.30
Connection Diagram (pg. 8-25)			B	A	A	D	D	C	C	C	A	D	C	C	C	C

Three Phase — Table 4			Boosting					Bucking					
Catalog Number*	Line Voltage (Available)		183Y/ 106	208Y/ 120	195	208	225	240	245	250	256	265	272
Insulating Transformer Rating	Load Voltage (Output)		208Y/ 120	236Y/ 136	208	236	240	208	230	234	240	234	240
050BB1632J		kVA	1.13	1.28	1.13	.62	1.30	.56	1.33	1.35	1.39	.72	.74
.050 kVA	Load	Amps	3.13	3.13	3.13	1.56	3.13	1.56	3.34	3.34	3.34	1.77	1.77
100BB1632J		kVA	2.25	2.55	2.25	1.30	2.60	1.13	2.66	2.70	2.77	1.44	1.48
.100 kVA	Load	Amps	6.25	6.25	6.25	3.13	6.25	3.13	6.67	6.67	6.67	3.55	3.55
150BB1632J		kVA	3.38	3.83	3.38	1.95	3.90	1.69	3.98	4.05	4.16	2.15	2.21
.150 kVA	Load	Amps	9.38	9.38	9.38	4.69	9.38	4.69	10.00	10.00	10.00	5.31	5.31
205BB1632J		kVA	5.63	6.39	5.63	3.17	6.50	2.81	6.64	6.76	6.93	3.59	3.68
.250 kVA	Load	Amps	15.63	15.63	15.63	7.81	15.63	7.81	16.67	16.67	16.67	8.85	8.85
505BB1632J		kVA	11.26	12.77	11.26	6.33	12.99	5.63	13.28	13.50	13.86	7.17	7.36
.500 kVA	Load	Amps	31.25	31.26	31.25	15.63	31.25	15.63	33.33	33.33	33.33	17.69	17.71
705BB1632J		kVA	16.89	19.16	16.89	9.50	19.49	8.44	19.92	20.26	20.78	10.76	11.04
.750 kVA	Load	Amps	46.88	46.88	46.88	23.44	46.88	23.44	50.00	50.00	50.00	26.54	26.56
1BB1632J		kVA	22.52	25.55	22.52	12.67	25.98	11.26	26.56	27.02	27.71	14.34	14.72
1.00 kVA	Load	Amps	62.50	62.50	62.50	31.25	62.50	31.25	66.67	66.67	66.67	35.39	35.42
105BB1632J		kVA	33.77	38.32	33.77	19.00	38.97	16.89	39.84	40.53	41.57	21.52	22.08
1.50 kVA	Load	Amps	93.75	93.75	93.75	46.88	93.75	46.88	100.00	100.00	100.00	53.08	53.13
2BB1632J		kVA	45.03	51.10	46.03	25.33	51.96	22.52	53.11	54.04	55.43	28.69	29.44
2.00 kVA	Load	Amps	125.00	125.00	125.00	62.50	125.00	62.50	133.33	133.33	133.33	70.78	70.83
3BB1632J		kVA	67.55	76.64	67.55	38.00	77.94	33.77	79.67	81.06	83.14	43.03	44.17
3.00 kVA	Load	Amps	187.50	187.50	187.50	93.75	187.50	93.75	200.00	200.00	200.00	106.17	106.25
5BB1632J		kVA	112.58	127.74	112.58	63.33	129.90	56.29	132.79	135.09	138.56	71.72	73.61
5.00 kVA	Load	Amps	312.50	312.50	312.50	156.25	312.50	156.25	333.33	333.33	333.33	176.95	177.08
Quantity Required			3	3	2	2	2	2	2	2	2	2	2
Connection Diagram (pg. 8-25)			F	F	H	G	H	G	H	H	H	G	G

* All Buck-Boost transformers listed are available for immediate shipment.

- Output voltage for lower input voltage can be found by: $\frac{\text{Rated Output Voltage}}{\text{Rated Input Voltage}} \times$ Input Actual Voltage = Output New Voltage.
- Output kVA available at reduced input voltage can be found by: $\frac{\text{Actual Input Voltage}}{\text{Rated Input Voltage}} \times$ Output kVA = New kVA Rating.
- Inputs and outputs may be reversed without affecting kVA capacity. See note on page 8-25.

Warehouse Stock Transformers

Buck-Boost

Selection

240 × 480 Volts Primary — 24/48 Volts Secondary, 60 Hz, No Taps, Wall Mounted

Single Phase — Table 5		Boosting										Bucking			
Catalog Number*	Line Voltage (Available)	230	380	416	425	430	435	440	450	450	460	277	480	480	504
Insulating Transformer Rating	Load Voltage (Output)	276	418	458	468	473	457	462	495	472	483	231	436	457	480
050BB2448J .050 kVA	kVA	.29	.44	.48	.49	.49	.95	.96	.52	.98	1.01	.29	.50	1.00	1.05
	Load Amps	1.04	1.04	1.04	1.04	1.04	2.08	2.08	1.04	2.08	2.08	1.25	1.15	2.19	2.19
100BB2448J .100 kVA	kVA	.58	.87	.95	.97	.99	1.90	1.93	1.03	1.97	2.01	.58	1.00	2.00	2.10
	Load Amps	2.08	2.08	2.08	2.08	2.08	4.17	4.17	2.08	4.17	4.17	2.50	2.29	4.38	4.38
150BB2448J .150 kVA	kVA	.86	1.31	1.43	1.46	1.48	2.86	2.89	1.55	2.95	3.02	.86	1.50	3.00	3.15
	Load Amps	3.13	3.13	3.13	3.13	3.13	6.25	6.25	3.13	6.25	6.25	3.75	3.44	6.56	6.56
205BB2448J .250 kVA	kVA	1.44	2.18	2.38	2.43	2.46	4.76	4.81	2.58	4.92	5.03	1.44	2.50	5.00	5.25
	Load Amps	5.21	5.21	5.21	5.21	5.21	5.21	10.42	5.21	10.42	10.42	6.25	5.73	10.94	10.94
505BB2448J .500 kVA	kVA	2.88	4.35	4.77	4.87	4.93	9.52	9.62	5.16	9.83	10.06	2.88	5.00	10.00	10.50
	Load Amps	10.42	10.42	10.42	10.42	10.42	20.83	20.83	10.42	20.83	20.83	12.50	11.46	21.88	21.88
705BB2448J .750 kVA	kVA	4.31	6.53	7.15	7.30	7.39	14.28	14.44	7.73	14.75	15.09	4.31	7.49	15.00	15.75
	Load Amps	15.63	15.63	15.62	15.63	15.63	31.25	31.25	15.63	31.25	31.25	18.75	17.19	32.81	32.81
1BB2448J 1.00 kVA	kVA	5.75	8.71	9.53	9.74	9.85	19.04	19.25	10.31	19.67	20.13	5.75	9.99	20.00	21.00
	Load Amps	20.83	20.83	20.83	20.83	20.83	41.67	41.67	20.83	41.67	41.67	25.00	22.92	43.75	43.75
105BB2448J 1.50 kVA	kVA	8.63	13.06	14.30	14.61	14.78	28.56	28.88	15.47	29.50	30.19	8.63	14.99	30.00	31.50
	Load Amps	31.25	31.25	31.25	31.25	31.25	62.50	62.50	31.25	62.50	62.50	37.50	34.38	65.63	65.63
2BB2448J 2.00 kVA	kVA	11.50	17.42	19.07	19.48	19.71	38.08	38.50	20.63	39.33	40.25	11.50	19.98	40.00	42.00
	Load Amps	41.67	41.67	41.67	41.67	41.67	83.33	83.33	41.67	83.33	83.33	50.00	45.83	87.50	87.50
3BB2448J 3.00 kVA	kVA	17.25	26.13	28.60	29.22	29.56	57.13	57.75	30.94	59.00	60.38	17.25	29.98	60.00	63.00
	Load Amps	62.50	62.50	62.50	62.50	62.50	125.00	125.00	62.50	125.00	125.00	75.00	68.80	131.25	131.25
5BB2448J 5.00 kVA	kVA	28.75	43.54	47.67	48.70	49.30	95.20	96.20	51.56	98.30	100.60	28.80	50.00	100.00	105.00
	Load Amps	104.17	104.17	104.17	104.17	104.20	208.30	208.30	104.17	208.30	208.30	125.00	114.60	218.75	218.75
Connection Diagram (pg. 8-25)		B	D	D	D	D	C	C	D	C	C	B	D	C	C

Three Phase — Table 6		Boosting								Bucking							
Catalog Number*	Line Voltage (Available)	399Y/ 230	380	430	440	460	460	480	480	440	440	460	460	480	480	500	500
Insulating Transformer Rating	Load Voltage (Output)	480Y/ 277	418	473	462	506	483	528	504	400	419	438	418	457	436	455	476
050BB2448J .050 kVA	kVA	.86	.75	.85	1.66	.91	1.74	.95	1.82	.79	1.58	1.66	.83	1.73	.86	.90	1.80
	Load Amps	1.04	1.04	1.04	2.08	1.04	2.08	1.04	2.08	1.14	2.18	2.18	1.14	2.18	1.14	1.14	2.19
100BB2448J .100 kVA	kVA	1.73	1.51	1.70	3.33	1.82	3.48	1.90	3.63	1.59	3.17	3.31	1.66	3.46	1.73	1.80	3.61
	Load Amps	2.08	2.08	2.08	4.16	2.08	4.16	2.08	4.16	2.29	4.37	4.37	2.29	4.37	2.29	2.29	4.38
150BB2448J .150 kVA	kVA	2.60	2.26	2.56	4.99	2.73	5.22	2.85	5.45	2.38	4.75	4.97	2.48	5.19	2.59	2.70	5.41
	Load Amps	3.12	3.13	3.12	6.24	3.12	6.25	3.12	6.24	3.43	6.55	6.55	3.43	6.55	3.43	3.43	6.56
205BB2448J .250 kVA	kVA	4.33	3.77	4.26	8.32	4.56	8.70	4.76	9.08	3.96	7.92	8.28	4.14	8.64	4.32	4.51	9.02
	Load Amps	5.20	5.21	5.20	10.40	5.20	10.40	5.20	10.40	5.72	10.92	10.92	5.72	10.92	5.72	5.72	10.94
505BB2448J .500 kVA	kVA	8.60	7.54	8.52	16.64	9.11	17.40	9.51	18.16	7.93	15.85	16.57	8.28	17.29	8.64	9.02	18.04
	Load Amps	10.40	10.42	10.40	20.80	10.40	20.80	10.40	20.80	11.44	21.84	21.84	11.44	21.84	11.44	11.44	21.88
705BB2448J .750 kVA	kVA	12.90	11.31	12.77	24.97	13.67	26.10	14.27	27.24	11.89	23.77	24.85	12.42	25.93	12.96	13.52	27.06
	Load Amps	15.60	15.63	15.60	31.20	15.60	31.20	15.60	31.20	17.16	32.76	32.76	17.16	32.76	17.16	17.16	32.81
1BB2448J 1.00 kVA	kVA	17.30	15.08	17.03	33.29	18.23	34.80	19.02	36.31	15.85	31.70	33.14	16.57	34.57	17.28	18.03	36.08
	Load Amps	20.80	20.83	20.80	41.60	20.80	41.60	20.80	41.60	22.88	43.68	43.68	22.88	43.68	22.88	22.88	43.75
105BB2448J 1.50 kVA	kVA	25.90	22.62	25.55	49.93	27.34	52.50	28.53	54.47	23.78	47.55	49.71	24.85	51.86	25.92	27.05	54.13
	Load Amps	31.20	31.25	31.20	62.40	31.20	62.40	31.20	62.40	34.32	65.52	65.52	34.32	65.62	34.32	34.32	65.63
2BB2448J 2.00 kVA	kVA	34.60	30.17	34.07	66.58	36.46	69.60	38.04	72.63	31.70	63.40	66.27	33.13	69.15	34.56	36.06	72.17
	Load Amps	41.60	41.67	41.60	83.20	41.60	83.20	41.60	83.20	45.76	87.36	87.36	45.76	87.36	45.76	45.76	87.50
3BB2448J 3.00 kVA	kVA	52.00	45.25	51.18	100.03	54.69	104.57	57.07	109.12	47.63	95.25	99.57	49.77	103.89	51.92	54.18	108.25
	Load Amps	62.50	62.50	62.50	125.00	62.50	125.00	62.50	125.00	68.75	131.25	131.25	68.75	131.25	68.75	68.75	131.25
5BB2448J 5.00 kVA	kVA	86.10	75.42	85.17	166.44	91.15	174.01	95.11	181.57	79.26	158.50	165.69	82.83	172.87	86.39	90.16	180.42
	Load Amps	104.00	104.17	104.00	208.00	104.00	208.00	104.00	208.00	114.40	218.40	218.40	114.40	218.40	114.40	114.40	218.75
Quantity Required		3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Connection Diagram (pg. 8-25)		E	G	G	H	G	H	G	H	G	H	H	G	H	G	G	H

* All Buck-Boost transformers listed are available for immediate shipment.

- Output voltage for lower input can be found by: $\frac{\text{Rated Output Voltage}}{\text{Rated Input Voltage}}$ × Input Actual Voltage = Output New Voltage.
- Output kVA available at reduced input voltage can be found by: $\frac{\text{Actual Input Voltage}}{\text{Rated Input Voltage}}$ × Output kVA = New kVA Rating.
- Inputs and outputs may be reversed without affecting kVA capacity. See note on page 8-25.

Buck-Boost Transformers

Single Phase, Three Phase

Typical Connection Diagrams

Single Phase

Diagram A

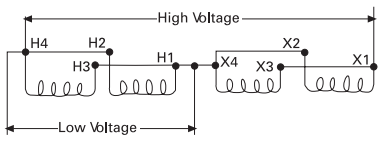


Diagram B

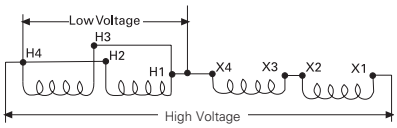


Diagram C

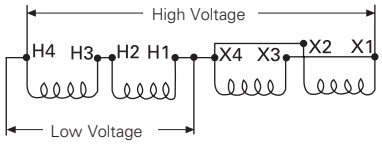
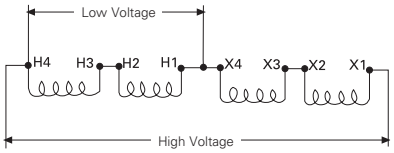
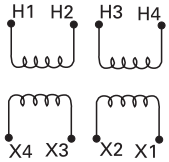


Diagram D



(Standard Step-down Application)*



Three Phase

Note: Contact sales office for diagrams applicable to "J" suffix.

Diagram E①

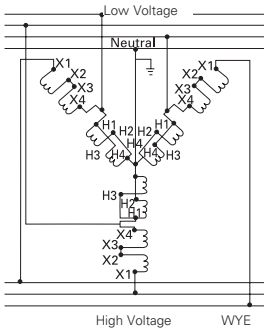


Diagram F①

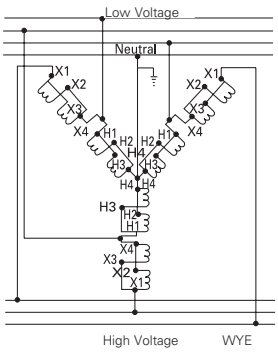


Diagram G②

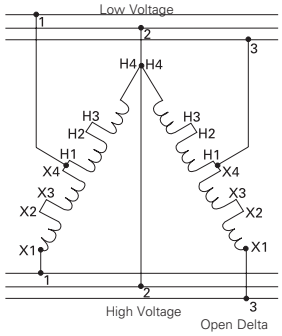


Diagram J①

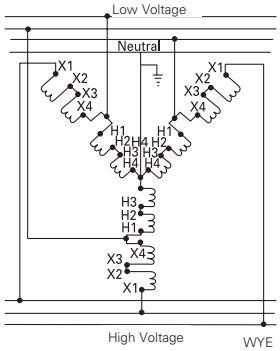


Diagram H②

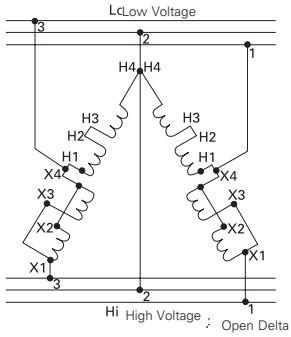
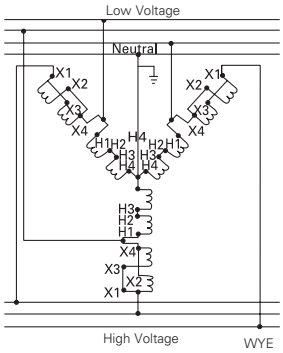


Diagram K①



*Low Voltage Applications:
By using the "Standard Step-down Application" diagram at left, buck boost transformers will convert 120V or 240V to 12, 24, 16 or 32 volts and 240V or 480V to 24 or 48 volts without affecting the nameplate kVA rating of the transformer. Buck boost transformers used in this type of application will become isolation or insulating type transformers.

① These diagrams can only be used when the source is a 4-wire supply.
② The neutral XO should not be used when the source is a three wire supply.

Note:
- Inputs and Outputs may be reversed; kVA capacity remains constant. Exception: Cannot use 3-wire input with 4-wire output to form a neutral and does not apply to standard step-down applications.
- Refer to NEC 450-4 for overcurrent protection of an autotransformer.
- All applications are suitable for 60Hz only, contact factory for 50Hz information.

Drip Shield/Weather Shield Kits for Ventilated Transformers①②

Drip shields are integral to enclosure for Series H transformers and all DOE 2016 Series J transformers. Include DS option code to catalog number to include with single phase Series J transformers. Drip shield kits are available for field installation for Series J and other previously sold series transformers. Call factory for price and availability.

Wall Mounting Brackets for Ventilated Transformers

For Series H transformers, wall brackets are integral to the enclosure up to 30kVA and most 45kVA. A Wall Bracket Kit is available for 45kVA transformers that do not include wall brackets and for most 75kVA transformers. They should be ordered separately for field installation rather than including the W option in the catalog number. Series H wall brackets are not seismic certified. For Series J, include W option code for wall brackets to come with Series J transformers up to 75kVA or order separately for field installation. Call factory for price and availability.

Terminal Lug Kits For Ventilated Transformers⑤

Catalog Number	Single Phase kVA Sizes	Three Phase kVA Sizes	Primary Terminal Lug③ Qty.④	Range	Secondary Terminal Lug③ Qty.④	Cable Range	Primary Hardware Included		Secondary Hardware Included	
							Qty.	Bolt Size	Qty.	Bolt Size
TLK14Q	75, 100	—	4	#6-350 kcmil	8	#6-350 kcmil	4	3/8 x 1 1/2	8	3/8 x 1 1/2
TLK15Q	167.5	—	8	#6-350 kcmil	12	1/0-750 kcmil	8	3/8 x 1 1/2	12	1/2 x 1 1/2
TLK34Q	—	112.5	3	#6-350 kcmil	8	#6-350 kcmil	3	3/8 x 1 1/2	8	3/8 x 1 1/2
TLK35Q	—	150	3	#6-350 kcmil	8	1/0-750 kcmil	3	3/8 x 1 1/2	8	3/8 x 1 1/2
TLK36Q	—	225	6	#6-350 kcmil	16	#6-350 kcmil	6	3/8 x 1 1/2	16	1/2 x 1 1/2
TLK37Q	—	300	6	#6-350 kcmil	16	1/0-750 kcmil	6	3/8 x 1 1/2	16	1/2 x 1 1/2
TLK38Q	—	500	9	#6-350 kcmil	24	1/0-750 kcmil	9	3/8 x 1 1/2	24	1/2 x 1 1/2
TLK39Q	—	750	12	#6-350 kcmil	28	1/0-750 kcmil	12	3/8 x 1 1/2	28	1/2 x 1 1/2

③ May be used on "JST" suffix and "non JST" suffix transformers. Terminal lugs are screw type, lug connectors suitable for both copper and aluminum cable. All lugs are single barrel and suitable for cable ranges shown. 750kcmil lugs are capable of holding (2) 250kcmil cables in lieu of (1) 750kcmil cable. All lugs are rated 90˚C.

④ Lug kits contain quantity required for each kVA based NEC ampacities for cable range indicated. For cable sizes outside the range, hole size of terminal may not be the correct size to mount other lugs. Bolt size in Hardware included column provides indication of hole size.

⑤ Primary and secondary terminal lugs are included on most ventilated transformers. (15kVA - 75kVA 3PH & 15kVA - 50kVA 1PH). Some 45 or 75kVA may not have secondary lugs depending on number and type of additional options. Call factory for confirmation.

Standard Terminal Lug Offerings⑥

(Primary and Secondary) for Ventilated Transformers									
1-Phase					3-Phase				
kVA	120/240V	208V	480V	600V	kVA	120/240V	208V	480V	600V
0-15	Contact customer support				0-15	Contact customer support			
15	#2/0-6	#14-2	#14-2	#14-2	15	#14-2	#14-2	#14-2	#14-2
25	250MCM-6	250MCM-6	#14-2	#14-2	30	#2/0-6	#2/0-6	#14-2	#14-2
37.5	350MCM-6	350MCM-6	#14-2	#14-2	45	250MCM-6	250MCM-6	#14-2	#14-2
50	600MCM-2	600MCM-2	#2/0-6	#2/0-6	75	600MCM-2	350MCM-6	#2/0-6	#2/0-6
>50	Contact customer support				>75	Contact customer support			

⑥ Values listed above are for standard configurations. There may be slight variations depending on requirements. Contact Customer Support for special requirements

Wall Bracket and Drip Shield Kits for Series J DOE 2016 3 Phase Transformers

Series J Wall Bracket Kits⑦							
	Temp Rise			K Factor			
kVA	150C	115C	80C	K1	K4	K13	K20
15	TWB15J	TWB15J	TWB75J	TWB15J	TWB15J	TWB75J	TWB75J
30	TWB75J	TWB75J	TWB75J	TWB75J	TWB75J	TWB75J	TWB75J
45	TWB75J	TWB75J	NA	TWB75J	TWB75J	NA	NA
75⑧	TWB75J	TWB75J	NA	TWB75J	TWB75J	NA	NA

⑦ Wall Bracket Kit not available for 75kVA with Copper Windings.

⑧ See Wall Bracket/Drip Shield Table on Page 8-8 for availability information.

Wall Bracket for Series J SIngle Phase Transformers

Series J Wall Bracket Kits			
	Temp Rise		
kVA	150C	115C	80C
15	TWB15J	TWB15J	TWB75J
25	TWB75J	TWB75J	TWB75J
37.5	TWB75J	TWB75J	TWB75J
50	TWB75J	TWB75J	TWB75J
75	NA	NA	NA
100	NA	NA	NA

① These accessories fit only warehouse stock transformers with JST Catalog Suffix.

② UL Listed for indoor and outdoor use with dripshield installed.