



## BUCK-BOOST TRANSFORMERS



Buck-boost transformers represent an economical way to both raise supply voltage caused by line drop or equipment demand on the distribution system; or lower voltage caused by increased system voltages due to supply line adjustments. Some loads including lighting and resistive loads, require a stable supply to maintain performance. The detrimental effects of incorrect supply line voltage can cause equipment failure.

### Key Features:

- Ratings from 50VA to 5000VA
- Primary Voltage 120/240, 240/480
- 50/60 Hz frequency
- Single & three phase
- UL listed
- CSA certified
- 10 year warranty

*For more information, click one of the links below:*

- [Buck-Boost Catalog Section \(HTP-08 Catalog Sec. 2\)](#)
- [Enclosure Drawings, Electrical Connection Diagrams, Termination Details \(HTP-08 Catalog Sec. General Info\)](#)
- [Buck-Boost Installation Manual \(IOMGE Installation Manual\)](#)

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## Why Use Buck-Boost Transformers?

The advantages of using a buck-boost transformer over an equivalent standard isolation transformer are as follows:

### Advantages

- 1) Used in a variety of applications
- 2) Inexpensive
- 3) Smaller and lighter
- 4) More efficient
- 5) 5-10 times increase in kVA

### Disadvantages

- 1) No circuit isolation
- 2) Cannot create a neutral
- 3) KVA and voltages do not match what's on the nameplate kVA and voltages.



## Buck-Boost Application

Buck-boost transformers offer an economical solution to the adjustment of line voltages that are slightly above or below normal. When a buck-boost transformer is connected as an autotransformer, only a portion of the load kVA is actually transformed. The majority of the load kVA is passed directly through to the source. For this reason a buck-boost transformer may be used to supply a much larger load kVA than is indicated on the nameplate.

Buck-boost transformers can be used to adjust **stable** voltages only. Fluctuating line voltages should be regulated with a Line Voltage Conditioner. Refer to 'Section 6' for details.

### BUCK-BOOST STANDARD SPECIFICATIONS

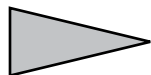
	50 to 1000 VA	1500 to 5000 VA
<b>UL Listed</b>	File: E50394	File: E50394
<b>CSA Certified</b>	File: LR3902	File: LR3902
<b>Frequency</b>	50/60 Hz	50/60 Hz
<b>Insulation System</b>	130°C (80°C rise)	180°C (115°C rise)
<b>Standard Design</b>	Single Phase, welded core construction made with high quality, high permeability silicon steel laminations. Computer designed coils, accurately wound from high quality magnetic wire.	Single Phase, welded core construction made with high quality, high permeability silicon steel laminations. Computer designed coils, accurately wound from high quality copper magnetic wire.
<b>Encapsulation</b>	All units from 50VA to 5kVA are encapsulated with electrical grade silica sand and resin compounds.	All units from 50VA to 5kVA are encapsulated with electrical grade silica sand and resin compounds.
<b>Enclosure Type</b>	Heavy Duty Encapsulated NEMA Type 3R (optional NEMA 4, 4X and 12 available)	Heavy Duty Encapsulated NEMA Type 3R (optional NEMA 4, 4X and 12 available)
<b>Enclosure Finish</b>	ANSI 61 Grey, UL50	ANSI 61 Grey, UL50
<b>Termination</b>	Front accessible separate high and low voltage lead wires or copper tabs.	Front accessible separate high and low voltage lead wires or copper tabs.
<b>Conduit Knock-Outs</b>	Side and rear standard on all units.	Side and rear standard on all units.
<b>Mounting</b>	Standard Wall Mounting.	Standard Wall Mounting.

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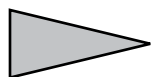
## Single Phase Specification Tables



### Group A

<b>Primary Voltage</b>	120/240
<b>Secondary Voltage</b>	12/24
<b>50/60 Hertz</b>	

VA	Catalog Number	Case Style <small>(Page 249)</small>	Approx. Dimensions (Inches)			Approx. Weight (Lbs.)	Mtg Type W - Wall
			Width	Depth	Height		
50	QC05ERCB	NQ0	3.75	5.25	7.25	6	W
100	QC10ERCB	NQ0	3.75	5.25	7.25	7	W
150	QC15ERCB	NQ0	3.75	5.25	7.25	8	W
200	QC20ERCB	NQ1	4.50	5.75	7.25	11	W
250	QC25ERCB	NQ1	4.50	5.75	7.25	13	W
350	QC35ERCB	NQ1	4.50	5.75	7.25	14	W
500	QC50ERCB	NQ2	5.00	4.75	9.25	15	W
750	QC75ERCB	NQ2	5.00	4.75	9.25	18	W
1000	Q1C0ERCB	NQ3	5.88	5.50	10.00	25	W
1500	Q1C5ERCF	NQ4	7.00	6.50	11.25	36	W
2000	Q002ERCF	NQ4	7.00	6.50	11.25	46	W
3000	Q003ERCF	NQ5	10.00	7.75	17.25	65	W
5000	Q005ERCF	NQ5	10.00	7.75	17.25	105	W



### Group B

<b>Primary Voltage</b>	120/240
<b>Secondary Voltage</b>	16/32
<b>50/60 Hertz</b>	

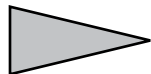
VA	Catalog Number	Case Style <small>(Page 249)</small>	Approx. Dimensions (Inches)			Approx. Weight (Lbs.)	Mtg Type W - Wall
			Width	Depth	Height		
50	QC05ESCB	NQ0	3.75	5.25	7.25	6	W
100	QC10ESCB	NQ0	3.75	5.25	7.25	7	W
150	QC15ESCB	NQ0	3.75	5.25	7.25	8	W
200	QC20ESCB	NQ1	4.50	5.75	7.25	11	W
250	QC25ESCB	NQ1	4.50	5.75	7.25	13	W
350	QC35ESCB	NQ1	4.50	5.75	7.25	14	W
500	QC50ESCB	NQ2	5.00	4.75	9.25	15	W
750	QC75ESCB	NQ2	5.00	4.75	9.25	18	W
1000	Q1C0ESCB	NQ3	5.88	5.50	10.00	25	W
1500	Q1C5ESCF	NQ4	7.00	6.50	11.25	36	W
2000	Q002ESCF	NQ4	7.00	6.50	11.25	46	W
3000	Q003ESCF	NQ5	10.00	7.75	17.25	65	W
5000	Q005ESCF	NQ5	10.00	7.75	17.25	105	W

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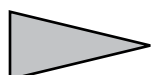
## Three Phase Specification Tables



### Group B

<b>Primary Voltage</b>	120/240
<b>Secondary Voltage</b>	16/32
<b>50/60 Hertz</b>	

VA	Catalog Number	Case Style (Page 249)	Approx. Dimensions (Inches)			Approx. Weight (Lbs.)	Mtg Type W - Wall
			Width	Depth	Height		
50	QC05ESCB	NQ0	3.75	5.25	7.25	6	W
100	QC10ESCB	NQ0	3.75	5.25	7.25	7	W
150	QC15ESCB	NQ0	3.75	5.25	7.25	8	W
200	QC20ESCB	NQ1	4.50	5.75	7.25	11	W
250	QC25ESCB	NQ1	4.50	5.75	7.25	13	W
350	QC35ESCB	NQ1	4.50	5.75	7.25	14	W
500	QC50ESCB	NQ2	5.00	4.75	9.25	15	W
750	QC75ESCB	NQ2	5.00	4.75	9.25	18	W
1000	Q1C0ESCB	NQ3	5.88	5.50	10.00	25	W
1500	Q1C5ESCF	NQ4	7.00	6.50	11.25	36	W
2000	Q002ESCF	NQ4	7.00	6.50	11.25	46	W
3000	Q003ESCF	NQ5	10.00	7.75	17.25	65	W
5000	Q005ESCF	NQ5	10.00	7.75	17.25	105	W



### Group C

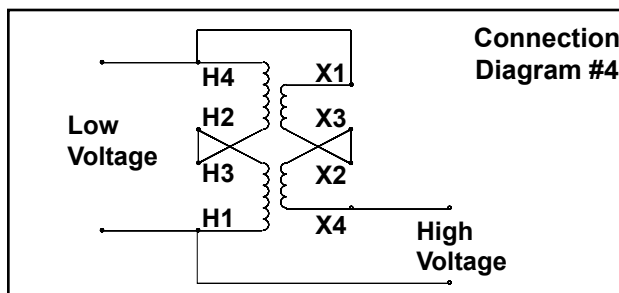
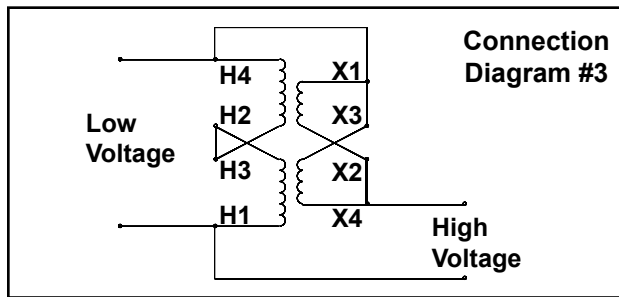
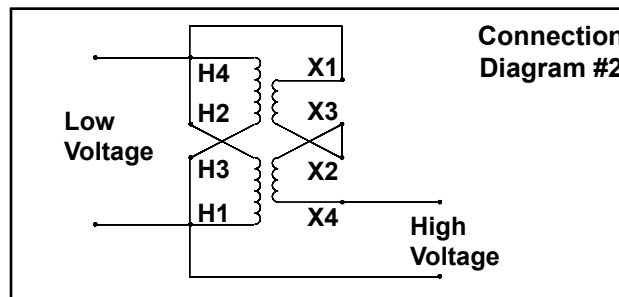
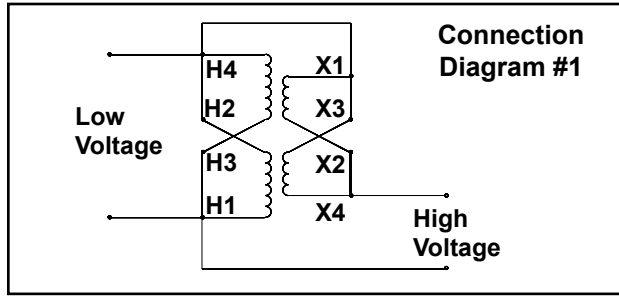
<b>Primary Voltage</b>	240/480
<b>Secondary Voltage</b>	24/48
<b>50/60 Hertz</b>	

VA	Catalog Number	Case Style (Page 249)	Approx. Dimensions (Inches)			Approx. Weight (Lbs.)	Mtg Type W - Wall
			Width	Depth	Height		
50	QC05DTCB	NQ0	3.75	5.25	7.25	6	W
100	QC10DTCB	NQ0	3.75	5.25	7.25	7	W
150	QC15DTCB	NQ0	3.75	5.25	7.25	8	W
200	QC20DTCB	NQ1	4.50	5.75	7.25	11	W
250	QC25DTCB	NQ1	4.50	5.75	7.25	13	W
350	QC35DTCB	NQ1	4.50	5.75	7.25	14	W
500	QC50DTCB	NQ2	5.00	4.75	9.25	15	W
750	QC75DTCB	NQ2	5.00	4.75	9.25	18	W
1000	Q1C0DTCB	NQ3	5.88	5.50	10.00	25	W
1500	Q1C5DTCF	NQ4	7.00	6.50	11.25	36	W
2000	Q002DTCF	NQ4	7.00	6.50	11.25	46	W
3000	Q003DTCF	NQ5	10.00	7.75	17.25	65	W
5000	Q005DTCF	NQ5	10.00	7.75	17.25	105	W

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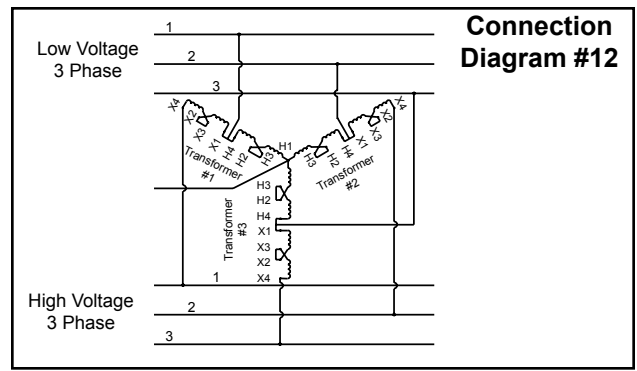
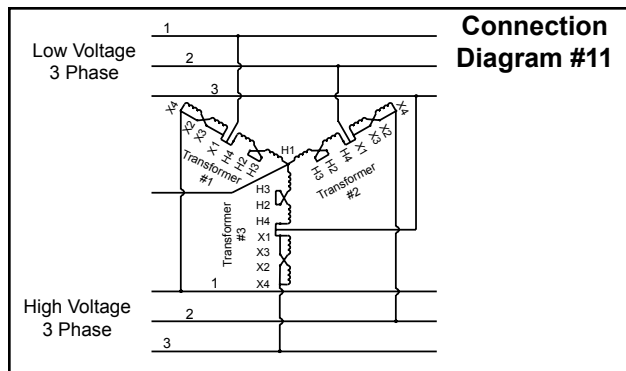
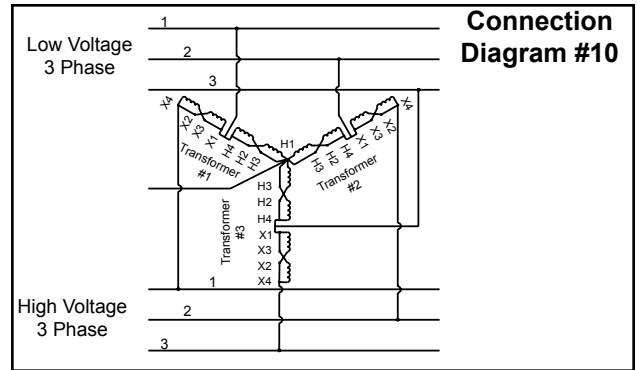
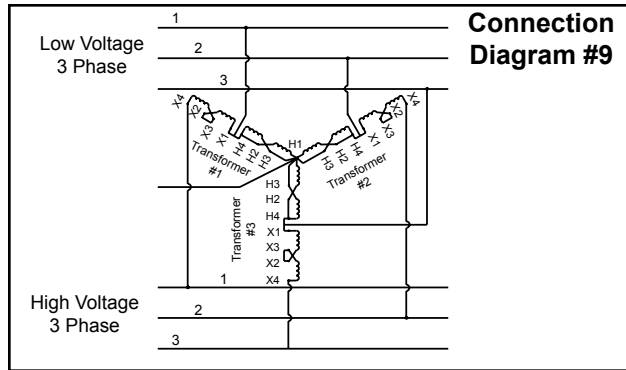
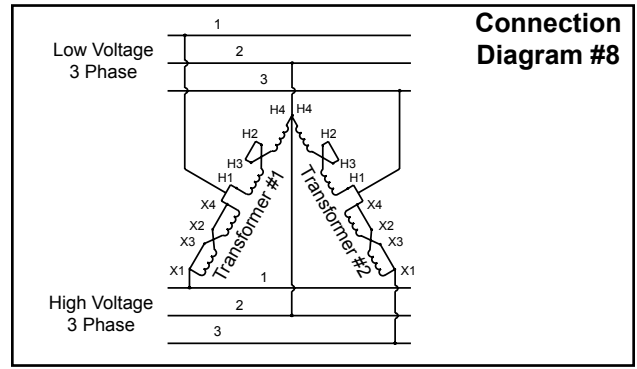
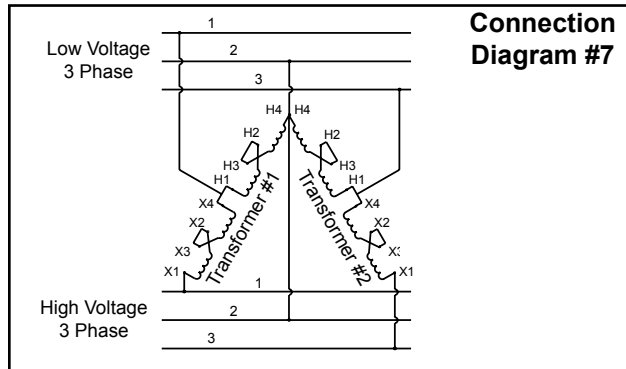
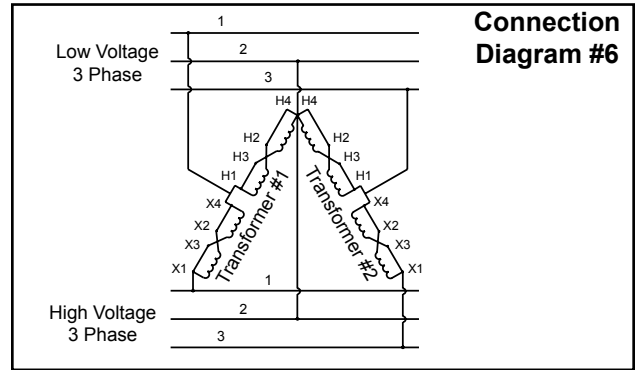
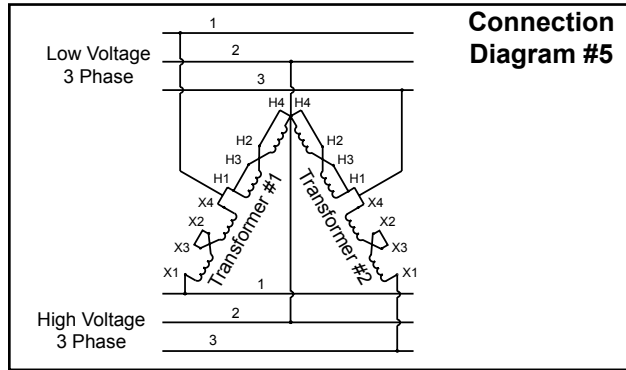
## Single Phase Connection Diagrams



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## Three Phase Connection Diagrams



SECTION 2