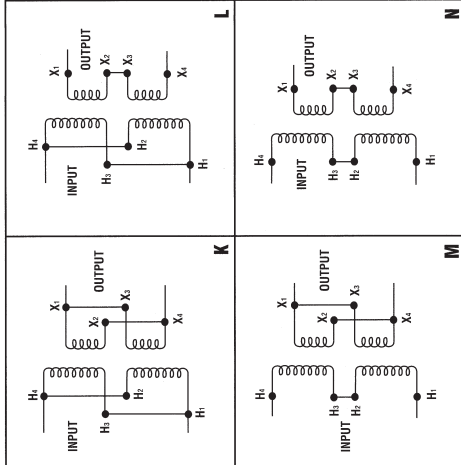


**USE INFORMATION BELOW FOR SINGLE PHASE AUTOTRANSFORMER CONNECTIONS**



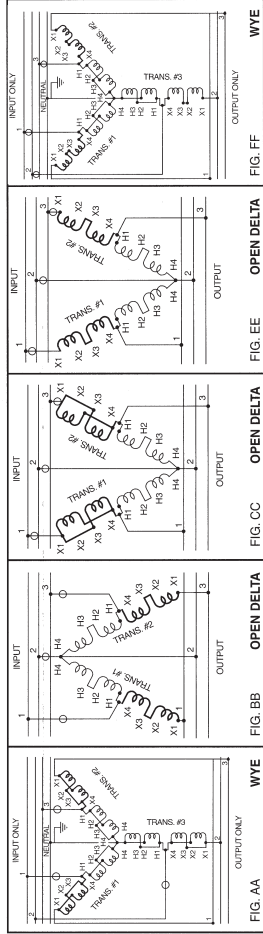
**INPUT VOLTAGE 120 X 240: OUTPUT VOLTAGE 12 X 24: 60 HZ**  
**\* All Sizes Of 3/4 KVA And Less Are Suitable For 50/60 HZ**

CATALOG NUMBER	INSULATING TRANSFORMER RATING	MAX. CURRENT OUTPUT	CONNECTION DIAGRAM			
			INPUT	OUTPUT	CONNECTION	DIAGRAM
T-1-81047	* 50 VA	12 V	12	24	K	
T-1-81048	* 100 VA	12	24	L		
T-1-81049	* 150 VA	12	24	M		
T-1-81050	0.25 KVA	20.80	20.80	20.80	N	
T-1-81051	0.50 KVA	41.60	20.80	20.80	M	
T-1-81052	0.75 KVA	62.50	20.80	20.80	M	
T-1-11683	1.00 KVA	83.20	41.60	41.60	M	
T-1-11684	1.50 KVA	125.00	62.50	62.50	M	
T-1-11685	2.00 KVA	166.00	83.20	83.20	M	
T-1-11686	3.00 KVA	250.00	125.00	125.00	M	
T-1-11687	5.00 KVA	416.00	208.00	208.00	M	
T-2-11688	7.50 KVA	625.00	312.50	312.50	M	
T-2-11689	10.00 KVA	832.00	416.00	416.00	M	

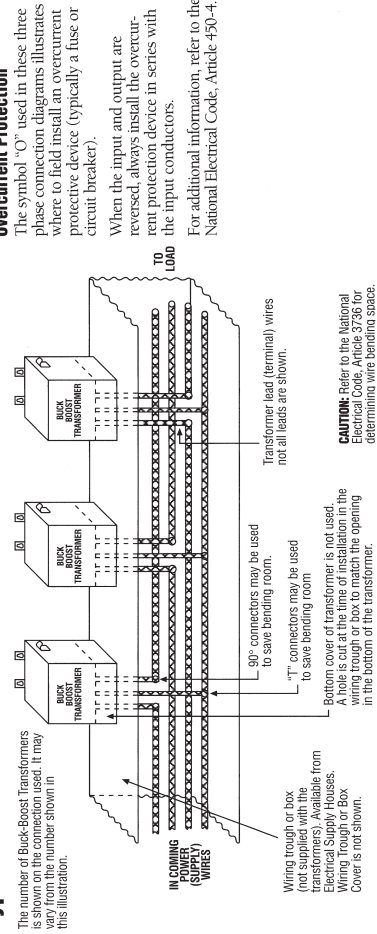


**CAUTION: DO NOT USE CONNECTIONS OTHER THAN THOSE SHOWN OR PROVIDED BY FACTORY.**

**Three Phase Connections**



**Typical Buck-Boost Autotransformer Installation**



The number of Buck-Boost Transformers varies from the number shown in this illustration.

**Autotransformer Overcurrent Protection**  
 The symbol "O" used in these three phase connection diagrams illustrates where to field install an overcurrent protective device (typically a fuse or circuit breaker).  
 When the input and output are reversed, always install the overcurrent protection device in series with the input conductors.  
 For additional information, refer to the National Electrical Code, Article 450-4.

**CAUTION:** Refer to the National Electrical Code, Article 578 for determining wire bending stress.

**GROUP I SINGLE PHASE AUTOTRANSFORMER CONNECTIONS**

CAT. NO. ▲ (SEE FOOTNOTE)	BOOSTING										BUCKING					
	95	100	105	110	115	120	125	132	138	144	113	120	208	222	227	240
T-1-81047	0.24	0.25	0.48	0.50	0.48	0.43	0.48	0.48	0.49	0.50	0.52	0.54	0.47	0.50	0.52	1.02
	2.08	2.08	4.17	4.17	2.08	2.08	2.08	2.08	2.08	2.08	4.60	4.60	4.60	2.28	2.28	4.37
T-1-81048	0.47	0.50	0.96	1.01	0.87	0.96	0.96	0.99	1.04	2.04	1.04	1.08	0.95	1.00	1.04	2.04
	4.17	4.17	8.33	8.33	4.17	4.17	4.17	4.17	4.17	8.75	9.20	9.20	4.56	4.56	4.58	8.75
T-1-81049	0.71	0.75	1.43	1.51	1.30	1.43	1.48	1.51	1.51	3.00	1.56	1.62	1.42	1.50	1.56	3.00
	6.25	6.25	12.50	12.50	6.25	6.25	6.25	6.25	6.25	13.10	13.80	13.80	6.86	6.86	6.86	13.10
T-1-81050	1.19	1.25	2.40	2.50	2.16	2.39	2.46	2.52	2.52	5.10	2.60	2.75	2.37	2.50	2.60	5.10
	10.42	10.40	20.80	20.80	10.40	10.40	10.40	10.40	10.40	21.80	22.80	22.80	11.40	11.40	11.40	21.80
T-1-81051	2.37	2.50	4.80	5.00	4.33	4.79	4.93	5.04	5.04	10.20	5.20	5.40	4.74	5.00	5.20	10.20
	20.83	20.83	41.67	41.67	20.83	20.83	20.83	20.83	20.83	43.70	46.80	46.80	22.80	22.80	22.80	43.70
T-1-81052	3.56	3.75	7.17	7.56	6.50	7.19	7.41	7.56	7.56	15.30	7.80	8.15	7.10	7.50	7.80	15.30
	31.25	31.25	62.50	62.50	31.25	31.25	31.25	31.25	31.25	65.50	68.50	69.50	34.40	34.40	34.40	65.50
T-1-11683	4.75	5.00	9.58	10.00	8.66	9.58	9.87	10.00	10.00	20.40	10.40	10.80	9.50	10.00	10.00	20.40
	41.67	41.67	83.31	83.31	41.67	41.67	41.67	41.67	41.67	87.50	91.50	91.50	45.80	45.80	45.80	87.50
T-1-11684	7.12	7.50	14.50	15.10	13.40	14.80	15.10	15.10	15.10	30.60	15.00	16.20	14.24	15.00	15.60	30.60
	62.50	62.50	125.00	125.00	62.50	62.50	62.50	62.50	62.50	132.00	138.00	138.00	68.60	68.60	68.60	132.00
T-1-11685	9.50	10.00	19.20	20.20	17.30	19.16	19.70	20.10	20.10	40.80	20.80	21.60	19.00	20.00	20.30	40.80
	83.30	83.30	166.60	166.60	83.30	83.30	83.30	83.30	83.30	175.00	183.00	183.00	91.60	91.60	91.20	175.00
T-1-11686	12.5	12.5	25.0	25.0	25.0	25.0	25.0	25.0	25.0	50.00	25.00	27.50	25.00	25.00	25.00	50.00
	125.00	125.00	250.00	250.00	125.00	125.00	125.00	125.00	125.00	263.00	275.00	275.00	136.80	136.80	136.80	263.00
T-1-11687	20.0	20.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	70.00	35.00	35.00	35.00	35.00	35.00	70.00
	208.00	208.00	416.00	416.00	208.00	208.00	208.00	208.00	208.00	437.00	457.00	457.00	228.00	228.00	228.00	437.00
T-2-11688 *	35.60	37.50	75.00	75.00	65.00	71.80	74.00	75.60	75.60	153.00	78.00	81.00	71.00	76.00	78.00	153.00
	312.50	312.50	625.00	625.00	312.50	312.50	312.50	312.50	312.50	655.00	688.00	688.00	344.00	344.00	344.00	655.00
T-2-11689 *	47.50	50.00	100.00	100.00	86.60	95.80	98.70	101.00	101.00	204.00	104.00	108.00	95.00	100.00	104.00	204.00
	416.60	416.60	833.30	833.30	416.60	416.60	416.60	416.60	416.60	875.00	915.00	915.00	458.00	458.00	458.00	875.00
Connection Diagram	700	700	1200	1200	600	600	600	600	600	1200	1200	1200	600	600	600	1200

**NOTE:** Inputs and Outputs may be reversed; KVA capacity remains constant. All applications above bold face line are suitable for 50/60 Hz. All applications below bold face line are suitable for 60 Hz only.

**IMPORTANT:** Refer to the N.E.C. (National Electrical Code) Article 450-4 for Overcurrent Protection of an Autotransformer.

▲ The first digit of the catalog number appearing on the transformer name plate may be different than what is shown on this instruction sheet.  
**EXAMPLE:** T-1 or T-2 or T-3 and ETC.

Larger KVA buck-boost transformers utilize multiple conductors on the secondary (X) terminals as shown below.

CAT. NO.	NUMBER OF LEADS PER TERMINATION							
	H1	H2	H3	H4	X1	X2	X3	X4
T-2-11688	1	1	1	1	2	2	2	2
T-2-11689	1	1	1	1	2	2	2	2

All leads with same designation (ex. X1, X1) MUST be joined together for proper operation.

# BUCK & BOOST TRANSFORMER INSTALLATION INSTRUCTIONS



Power Distribution Products Division

## SECONDRARY VOLTAGE 12/24

### Steps for Selecting the Proper Buck-Boost Transformer

- 1** Read down the column you have selected until you reach either the LOAD KVA or LOAD AMPS of the equipment you want to operate. You probably will not find the exact value of LOAD KVA or LOAD AMPS so go to the next higher rating.
- 2** From this point, read across the column to the far left-hand side and you have found the catalog number of the exact buck-boost transformer you need.
- 3** CONNECT the transformer according to the connection diagram specified at the bottom of the column where you selected your LINE VOLTAGE and LOAD VOLTAGE combination.

### Frequency

The supply line frequency must be the same as the frequency of the equipment to be operated—either 50 or 60 cycles.

### 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.

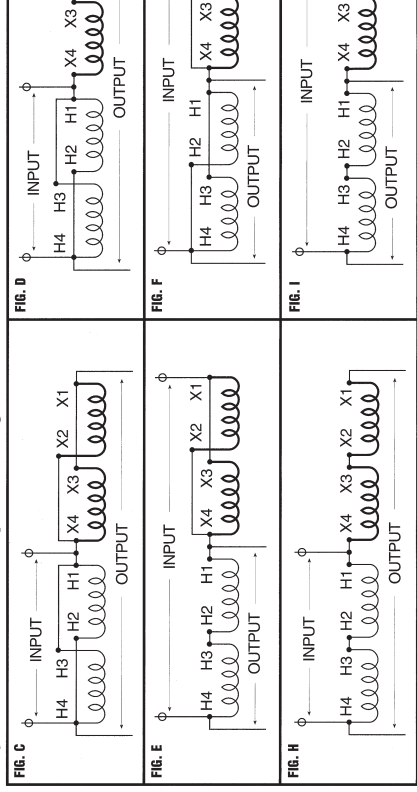
### 4 Step Selection

**1** A series of LINE VOLTAGE and LOAD VOLTAGE combinations are listed across the top of each selection chart. Select a combination from ANY of the charts that comes closest to matching the LINE VOLTAGE and LOAD VOLTAGE of your application.

### Connection Diagrams – Single Phase

- 1** The symbol "O" used in these single phase connection diagrams illustrates where to field install an overcurrent protective device (typically a fuse or circuit breaker) when one input conductor is grounded and the other input conductor is ungrounded.
- 2** When both input conductors are ungrounded, an overcurrent protection device is required to be installed in series with each input conductor.
- 3** When the input and output are reversed, always install the overcurrent protection device in series with the input conductor(s), as noted in items No. 1 and No. 2 shown above.
- 4** For additional information, refer to the National Electrical Code, Article 450-4.

### Only 1 Transformer is Required in Figure Shown Below



## USE INFORMATION BELOW FOR THREE PHASE AUTOTRANSFORMER CONNECTIONS

### GROUP I

CAT. NO. ▲ (SEE FOOTNOTES SHOWN ON PG. 2)	THREE PHASE BOOSTING				THREE PHASE BUCKING			
	189Y 109	196Y 113	201Y 116	208Y 120	219	230	250	264
T-1-81047	1.50 4.17	0.84 2.08	0.87 2.08	1.66 4.17	0.83 2.30	0.90 2.29	0.92 2.29	0.95 2.29
T-1-81048	10	6	6	10	10	6	6	6
T-1-81049	3.00 8.33	1.69 4.17	1.73 4.17	3.32 8.33	1.68 4.59	1.84 4.58	1.91 4.58	1.91 4.58
T-1-81050	4.50 12.50	2.53 6.25	2.60 6.25	4.98 12.50	2.71 6.88	2.76 6.87	2.86 6.88	2.86 6.88
T-1-81051	20	15	15	20	15	15	15	15
T-1-81052	7.51 20.83	4.22 10.42	4.33 10.42	8.30 20.83	4.15 11.42	4.60 11.45	4.60 11.45	4.76 11.46
T-1-11683	15.01 41.67	8.44 20.83	8.66 20.83	16.60 41.67	7.51 20.83	8.30 20.83	8.73 20.83	8.73 20.83
T-1-11684	60	35	35	60	30	30	30	30
T-1-11685	22.52 62.50	12.67 31.25	12.99 31.25	24.90 62.50	11.26 31.25	12.45 31.25	13.10 31.25	14.29 34.38
T-1-11686	90	50	50	90	45	45	45	45
T-1-11687	30.02 83.33	16.89 41.67	17.32 41.67	33.20 83.33	15.01 41.67	16.80 41.67	17.46 41.67	19.05 45.83
T-1-11688 *	125	70	70	125	60	60	60	60
T-2-11689 *	45.03 125.00	25.33 62.50	25.98 62.50	49.80 125.00	22.50 62.50	24.90 62.50	26.20 62.50	28.58 68.75
T-2-11688 *	175	100	100	175	90	90	90	90
T-2-11689 *	60.04 166.67	33.77 83.33	34.64 83.33	66.40 166.67	33.20 83.33	36.08 83.33	38.11 83.33	38.11 83.33
T-2-11688 *	250	125	125	250	125	125	125	125
T-2-11689 *	90.07 250.00	50.66 125.00	51.96 125.00	99.59 250.00	45.03 125.00	49.80 125.00	52.39 125.00	57.16 137.50
T-2-11688 *	350	200	200	350	175	175	175	175
T-2-11689 *	150.11 416.67	84.44 208.33	86.60 208.33	165.99 416.67	75.06 208.33	82.99 208.33	87.32 208.33	95.26 231.17
T-2-11688 *	600	350	350	600	300	300	300	300
T-2-11689 *	225.17 625.00	126.66 312.50	129.90 312.50	248.98 625.00	112.58 312.50	124.49 312.50	132.02 312.50	142.69 343.75
T-2-11688 *	1000	500	500	1000	450	450	450	450
T-2-11689 *	300.22 833.33	168.87 416.67	173.21 416.67	331.98 833.33	150.11 416.67	165.99 416.67	174.65 416.67	190.53 458.33
T-2-11688 *	1200	700	700	1200	600	600	600	600
Quantity Required	3	3	3	3	2	2	2	2
Connection Diagrams	A-A	F-F	F-F	A-A	B-B	B-B	B-B	B-B

**NOTE:** (1) Inputs and Outputs may be reversed; KVA capacity remains constant. All applications above bold face line are suitable for 50/60 Hz. All applications below bold face line are suitable for 60 Hz only.  
(2) Connection Diagrams A-A and F-F cannot be reverse connected.

Larger KVA buck-boost transformers utilize multiple conductors on the secondary (X) terminals as shown below.  
\* All leads with same designation (ex. X1, X1) MUST be joined together for proper operation.

T-2-11688	NUMBER OF LEADS PER TERMINATION				X4
	H1	H2	H3	H4	
1	1	1	1	2	2
T-2-11689	1	1	1	2	2

4815 W. 5th Street  
Lumberton, NC 28358-0499  
FAX (910) 739-0024  
www.acmepowervid.com  
SALES: (910) 739-1121 Inside NC  
(800) 334-5214 Outside NC



**CAUTION: DO NOT USE CONNECTIONS OTHER THAN THOSE SHOWN OR PROVIDED BY FACTORY**