



TYPE 21

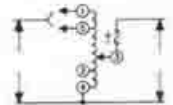
POWERSTAT Variable Transformers of the 21-22 Series are of open construction and are primarily designed for back-of-panel mounting. The rated output for the type 21 Series is 5 amperes for constant current loads and 7 amperes for constant impedance loads. For the 22 Series, the rated output is 2.25 amperes for constant current loads and 3.25 amperes for constant impedance loads. The 21 Series types operate from 120 volt lines and the 22 Series types from 240 volt lines. The tapping arrangement permits an output voltage range of zero to line voltage or zero to 17 percent above line voltage. As shown in Figure A, 21-22 Series POWERSTAT Variable Transformers can be operated at any frequency between 50 and 2000 hertz without reduction in allowable output current. Figure B shows the regulation curves for operating at full rated load. The curves show the voltage drop at any brush setting when full load is applied. Voltage drops for loads less than full load are proportional. Driving torque, d-c resistance per coil and maximum core and brush loss when operating under no load are given in the chart. All manually

operated units have a 3 3/4 inch (95.3mm) dial graduated 0-100 and an angle of rotation of 320° from the zero to maximum output voltage. Adjustable shafts can be extended from either end of the units, permitting general utility mounting if desired. In addition to the conventional screw-type method of connection, terminal adapters supplied with the units can be quickly mounted on the terminals for use with push-on connectors or soldered connections.

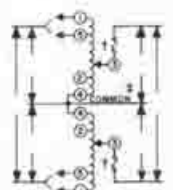
Motor-driven units in the 21-22 Series are designated by a letter M prefix in the type number. When ordering, prefix the motor-driven type number with the desired motor speed in seconds. Example: 5M21-2.

CONNECTIONS AND RATINGS

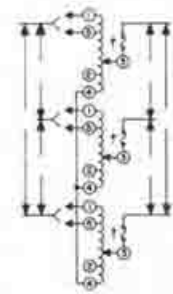
TYPE	CONNECTION	INPUT		OUTPUT				KNOB ROTATION	TERMINALS							
		VOLTS	HERTZ	VOLTS	CONSTANT CURRENT LOAD		CONSTANT IMPEDANCE LOAD		KNOB ON BASE END			KNOB ON RADIATOR END				
					MAX. AMPS.	MAX. KVA	MAX. AMPS.		MAX. KVA	INPUT	JUMPER*	OUTPUT	INPUT	JUMPER*	OUTPUT	
21 M21§	#1 Single Phase	120	50/60	0-120	5	0.60	7	0.84	CW	1-4	—	3-4	1-4	—	1-3	
				0-140	5	0.70	—	—	CCW	1-4	—	1-3	1-4	—	3-4	
										CW	4-5	—	3-4	1-2	—	1-3
										CCW	1-2	—	1-3	4-5	—	3-4
22 M22§	#1 Single Phase	240	50/60	0-240	2.25	0.54	3.25	0.78	CW	1-4	—	3-4	1-4	—	1-3	
				0-280	2.25	0.63	—	—	CCW	1-4	—	1-3	1-4	—	3-4	
										CW	4-5	—	3-4	1-2	—	1-3
										CCW	1-2	—	1-3	4-5	—	3-4
21-2 M21-2§	#2 1-Phase Series	240	50/60	0-240	5	1.2	7	1.7	CW	1-1	4-4	3-3	4-4	1-1	3-3	
				0-280	5	1.4	—	—	CCW	4-4	1-1	3-3	1-1	4-4	3-3	
	#2 3-Phase Open Delta	120	50/60	0-120	5	1	7	1.5	CW	5-5	4-4	3-3	2-2	1-1	3-3	
				0-140	5	1.2	—	—	CCW	2-2	1-1	3-3	5-5	4-4	3-3	
		480	50/60	0-480	2.25	1.1	3.25	1.6	CW	1-4-1	4-4	3-4-3	4-1-4	1-1	3-1-3	
				0-560	2.25	1.3	—	—	CCW	4-1-4	1-1	3-1-3	1-4-1	4-4	3-4-3	
22-2 M22-2§	#2 1-Phase Series	480	50/60	0-480	2.25	1.1	3.25	1.6	CW	5-4-5	4-4	3-4-3	2-1-2	1-1	3-1-3	
				0-560	2.25	1.3	—	—	CCW	2-1-2	1-1	3-1-3	5-4-5	4-4	3-4-3	
	#2 3-Phase Open Delta	240	50/60	0-240	2.25	0.94	3.25	1.4	CW	1-1	4-4	3-3	4-4	1-1	3-3	
				0-280	2.25	1.1	—	—	CCW	4-4	1-1	3-3	1-1	4-4	3-3	
		480	50/60	0-480	2.25	1.1	3.25	1.6	CW	5-5	4-4	3-3	2-2	1-1	3-3	
				0-560	2.25	1.3	—	—	CCW	2-2	1-1	3-3	5-5	4-4	3-3	
21-3 M21-3§	#3 3-Phase Wye	240	50/60	0-240	5	2.1	7	2.9	CW	1-1-1	4-4-4	3-3-3	4-4-4	1-1-1	3-3-3	
				0-280	5	2.4	—	—	CCW	4-4-4	1-1-1	3-3-3	1-1-1	4-4-4	3-3-3	
			60	0-240	5	2.1	7	2.9	CW	5-5-5	4-4-4	3-3-3	2-2-2	1-1-1	3-3-3	
				0-280	5	2.4	—	—	CCW	2-2-2	1-1-1	3-3-3	5-5-5	4-4-4	3-3-3	
22-3 M22-3§	#3 3-Phase Wye	480	50/60	0-480	2.25	1.9	3.25	2.7	CW	1-1-1	4-4-4	3-3-3	4-4-4	1-1-1	3-3-3	
				0-560	2.25	2.2	—	—	CCW	4-4-4	1-1-1	3-3-3	1-1-1	4-4-4	3-3-3	
			60	0-480	2.25	1.9	3.25	2.7	CW	5-5-5	4-4-4	3-3-3	2-2-2	1-1-1	3-3-3	
				0-560	2.25	2.2	—	—	CCW	2-2-2	1-1-1	3-3-3	5-5-5	4-4-4	3-3-3	



CONNECTION 1



CONNECTION 2



CONNECTION 3

CONNECTIONS SHOWN ARE FOR CW KNOB ROTATION, KNOB ON BASE END (CCW ROTATION, KNOB ON RADIATOR END)

†Common used as third leg in 3-phase open delta or neutral in 3-wire single phase series and 4-wire 3-phase wye connections; not used in 2-wire series or 3-wire wye connections.

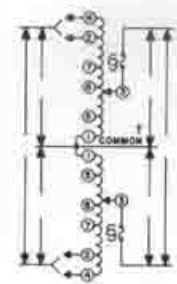
*Jumper provided in standard common position should be moved or removed as required.

§Motor-driven types use connections for CW rotation, knob on radiator end.

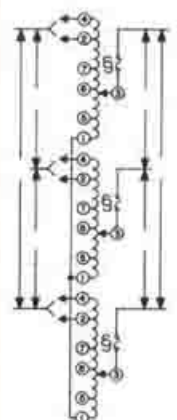
†Fuse recommended, not supplied.

CONNECTIONS AND RATINGS

TYPE	CONNECTION	INPUT		OUTPUT				KNOB ROTATION	TERMINALS						
		VOLTS	HERTZ	VOLTS	CONSTANT CURRENT LOAD		CONSTANT IMPEDANCE LOAD		KNOB ON RADIATOR END			KNOB ON BASE END			
					MAX. AMP.	MAX. KVA	MAX. AMP.		MAX. KVA	INPUT	JUMPER	OUTPUT	INPUT	JUMPER	OUTPUT
126U-2 MC126U-2 [□]	#1 1-PHASE SERIES	240	50/60	0-240	15	3.6	20	4.8	CW	4-4	1-1	3-3	1-1	4-4	3-3
				CCW	1-1	4-4	3-3	4-4	1-1	3-3					
		0-280	15	4.2	—	—	CW	2-2	1-1	3-3	5-5	4-4	3-3		
		CCW	5-5	4-4	3-3	2-2	1-1	3-3							
	#1 3-PHASE OPEN DELTA	120	50/60	0-120	15	3.1	20	4.2	CW	4-1-4	1-1	3-1-3	1-4-1	4-4	3-4-3
				CCW	1-4-1	4-4	3-4-3	4-1-4	1-1	3-1-3					
		0-140	15	3.6	—	—	CW	2-1-2	1-1	3-1-3	5-4-5	4-4	3-4-3		
		CCW	5-4-5	4-4	3-4-3	2-1-2	1-1	3-1-3							
226U-2 MC226U-2 [□]	#1 1-PHASE SERIES	480	50/60	0-480	7.5	3.6	10	4.8	CW	4-4	1-1	3-3	1-1	4-4	3-3
				CCW	1-1	4-4	3-3	4-4	1-1	3-3					
		0-560	7.5	4.2	—	—	CW	2-2	1-1	3-3	5-5	4-4	3-3		
		CCW	5-5	4-4	3-3	2-2	1-1	3-3							
		240	50/60	0-560	7.5*	1.8†	—	—	CW	6-6	1-1	3-3	7-7	4-4	3-3
				CCW	7-7	4-4	3-3	6-6	1-1	3-3					
	#1 3-PHASE OPEN DELTA	240	50/60	0-240	7.5	3.1	10	4.2	CW	4-1-4	1-1	3-1-3	1-4-1	4-4	3-4-3
				CCW	1-4-1	4-4	3-4-3	4-1-4	1-1	3-1-3					
		0-280	7.5	3.6	—	—	CW	2-1-2	1-1	3-1-3	5-4-5	4-4	3-4-3		
		CCW	5-4-5	4-4	3-4-3	2-1-2	1-1	3-1-3							
		120	50/60	0-280	7.5*	1.6†	—	—	CW	6-1-6	1-1	3-1-3	7-4-7	4-4	3-4-3
				CCW	7-4-7	4-4	3-4-3	6-1-6	1-1	3-1-3					
126U-3 MC126U-3 [□]	#2 3-PHASE WYE	240	50/60	0-240	15	6.2	20	8.3	CW	4-4-4	1-1-1	3-3-3	1-1-1	4-4-4	3-3-3
			CCW	1-1-1	4-4-4	3-3-3	4-4-4	1-1-1	3-3-3						
		60	0-280	15	7.3	—	—	CW	2-2-2	1-1-1	3-3-3	5-5-5	4-4-4	3-3-3	
		CCW	5-5-5	4-4-4	3-3-3	2-2-2	1-1-1	3-3-3							
226U-3 MC226U-3 [□]	#2 3-PHASE WYE	480	50/60	0-480	7.5	6.2	10	8.3	CW	4-4-4	1-1-1	3-3-3	1-1-1	4-4-4	3-3-3
			CCW	1-1-1	4-4-4	3-3-3	4-4-4	1-1-1	3-3-3						
		60	0-560	7.5	7.3	—	—	CW	2-2-2	1-1-1	3-3-3	5-5-5	4-4-4	3-3-3	
		CCW	5-5-5	4-4-4	3-3-3	2-2-2	1-1-1	3-3-3							
	240	60	0-560	7.5*	3.2†	—	—	CW	6-6-6	1-1-1	3-3-3	7-7-7	4-4-4	3-3-3	
			CCW	7-7-7	4-4-4	3-3-3	6-6-6	1-1-1	3-3-3						



CONNECTION 1



CONNECTION 2

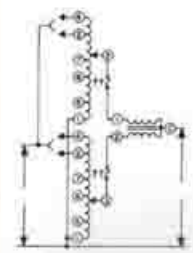
126 TYPES DO NOT HAVE TERMINALS 6 OR 7

CONNECTIONS SHOWN ARE FOR CW KNOB ROTATION, KNOB ON RADIATOR END (CCW ROTATION, KNOB ON BASE END)

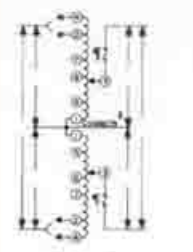
*Maximum output current in output voltage range from 0 to 25 percent above line voltage. At higher output voltages output current must be reduced according to rating curve Figure B on page 4.
 †Common used as third leg in 3-phase open delta or neutral in 3-wire single phase series and 4-wire 3-phase wye connections; not used in 2-wire series or 3-wire wye connections.
 ‡Maximum KVA at maximum output voltage. Maximum KVA at lower output voltages may be calculated from rating curve Figure B on page 4.
 §Fuses recommended on all units, 15 ampere fuses supplied internally on F126 types, 8 ampere on F226 types.
 ¶Jumper provided in standard common position should be moved or removed as required.
 □Motor-driven types use connections for CW rotation, knob on radiator end.

CONNECTIONS AND RATINGS

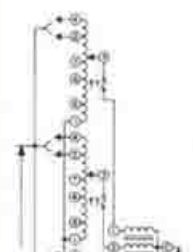
TYPE	CONNECTION	INPUT		OUTPUT				ROTA-TION	TERMINALS						
		VOLTS	HERTZ	CONSTANT CURRENT LOAD		CONSTANT IMPEDANCE LOAD			KNOB ON RADIATOR END			KNOB ON BASE END			
				MAX. AMP.	MAX. KVA	MAX. AMP.	MAX. KVA		INPUT	JUMPER Ø	OUTPUT	INPUT	JUMPER Ø	OUTPUT	
136BU-2 MD136BU-2*	#1 1-PHASE PARALLEL	120	50/60	0-120	44	5.3	56	6.7	CW	1-4	1-1, 4-4‡	1-C	1-4	1-1, 4-4‡	4-C
				0-140	44	6.2	—	—	CCW	1-4	1-1, 4-4‡	4-C	1-4	1-1, 4-4‡	1-C
				0-140	44	6.2	—	—	CCW	1-2	1-1, 2-2‡	1-C	4-5	4-4, 5-5‡	4-C
	#2 1-PHASE SERIES	240	50/60	0-240	22	5.3	28	6.7	CW	4-4	1-1	3-3	1-1	4-4	3-3
				0-280	22	6.2	—	—	CCW	1-1	4-4	3-3	4-4	1-1	3-3
				0-280	22	6.2	—	—	CCW	2-2	1-1	3-3	5-5	4-4	3-3
	#3 3-PHASE OPEN DELTA	120	50/60	0-120	22	4.6	28	5.8	CW	4-1-4	1-1	3-1-3	1-4-1	4-4	3-4-3
				0-140	22	5.3	—	—	CCW	1-4-1	4-4	3-4-3	4-1-4	1-1	3-1-3
				0-140	22	5.3	—	—	CCW	2-1-2	1-1	3-1-3	5-4-5	4-4	3-4-3
236BU-2 MD236BU-2*	#1 1-PHASE PARALLEL	240	50/60	0-240	20	4.8	26	6.2	CW	1-4	1-1, 4-4‡	1-C	1-4	1-1, 4-4‡	4-C
				0-280	20	5.6	—	—	CCW	1-4	1-1, 4-4‡	4-C	1-4	1-1, 4-4‡	1-C
		120	50/60	0-280	20**	2.4†	—	—	CW	1-2	1-1, 2-2‡	1-C	4-5	4-4, 5-5‡	4-C
				0-280	20**	2.4†	—	—	CCW	4-5	4-4, 5-5‡	4-C	1-2	1-1, 2-2‡	1-C
	#2 1-PHASE SERIES	480	50/60	0-480	10	4.8	13	6.2	CW	1-4	1-1	3-3	1-1	4-4	3-3
				0-560	10	5.6	—	—	CCW	1-1	4-4	3-3	4-4	1-1	3-3
		240	50/60	0-560	10**	2.4†	—	—	CW	2-2	1-1	3-3	5-5	4-4	3-3
				0-560	10**	2.4†	—	—	CCW	5-5	4-4	3-3	2-2	1-1	3-3
	#3 3-PHASE OPEN DELTA	240	50/60	0-240	10	4.2	13	5.4	CW	4-1-4	1-1	3-1-3	1-4-1	4-4	3-4-3
				0-280	10	4.8	—	—	CCW	1-4-1	4-4	3-4-3	4-1-4	1-1	3-1-3
		120	50/60	0-280	10**	2.1†	—	—	CW	2-1-2	1-1	3-1-3	5-4-5	4-4	3-4-3
				0-280	10**	2.1†	—	—	CCW	5-4-5	4-4	3-4-3	2-1-2	1-1	3-1-3
136BU-3 MD136BU-3*	#3 1-PHASE PARALLEL	120	50/60	0-120	66	7.9	84	10.1	CW	1-4	1-1-1, 4-4-4*	1-C	1-4	1-1-1, 4-4-4*	4-C
				0-140	66	9.2	—	—	CCW	1-4	1-1-1, 4-4-4*	4-C	1-4	1-1-1, 4-4-4*	1-C
				0-140	66	9.2	—	—	CCW	1-2	1-1-1, 2-2-2*	1-C	4-5	4-4-4, 5-5-5*	4-C
	#4 3-PHASE WYE	240	50/60	0-240	22	9.1	28	11.6	CW	4-4-4	1-1-1	3-3-3	1-1-1	4-4-4	3-3-3
				0-280	22	10.7	—	—	CCW	1-1-1	4-4-4	3-3-3	4-4-4	1-1-1	3-3-3
				0-280	22	10.7	—	—	CCW	2-2-2	1-1-1	3-3-3	5-5-5	4-4-4	3-3-3
236BU-3 MD236BU-3*	#3 1-PHASE PARALLEL	240	50/60	0-240	30	7.2	39	9.4	CW	1-4	1-1-1, 4-4-4*	1-C	1-4	1-1-1, 4-4-4*	4-C
				0-280	30	8.4	—	—	CCW	1-4	1-1-1, 4-4-4*	4-C	1-4	1-1-1, 4-4-4*	1-C
		120	50/60	0-280	30**	3.6†	—	—	CW	1-2	1-1-1, 2-2-2*	1-C	4-5	4-4-4, 5-5-5*	4-C
				0-280	30**	3.6†	—	—	CCW	4-5	4-4-4, 5-5-5*	4-C	1-2	1-1-1, 2-2-2*	1-C
	#4 3-PHASE WYE	480	50/60	0-480	10	8.3	13	10.8	CW	4-4-4	1-1-1	3-3-3	1-1-1	4-4-4	3-3-3
				0-560	10	9.7	—	—	CCW	1-1-1	4-4-4	3-3-3	4-4-4	1-1-1	3-3-3
		240	60	0-560	10**	4.2†	—	—	CW	2-2-2	1-1-1	3-3-3	5-5-5	4-4-4	3-3-3
				0-560	10**	4.2†	—	—	CCW	5-5-5	4-4-4	3-3-3	2-2-2	1-1-1	3-3-3



CONNECTION 1



CONNECTION 2



CONNECTION 3



CONNECTION 4



CONNECTION 5

*Jumpers also required connecting #3 on first unit to #1 on choke, #3 on second unit to #2 on choke and #3 on third unit to #3 on choke. T5579B choke required.

**Maximum output current in output voltage range from 0 to 25 percent above line voltage. At higher output voltages output current must be reduced according to rating curve Figure B on page 4.

†Maximum KVA at maximum output voltage. Maximum KVA at lower output voltages may be calculated from rating curve Figure B on page 4.

‡Units must be fused. 25 ampere fuses supplied internally on F136B types, 10 ampere on F236B types. On other types, fuses must be wired as shown.

§Common used as third leg in 3-phase open delta or neutral in 3-wire single phase series and 4-wire 3-phase wye connections; not used in 2-wire series or 3-wire wye connections.

¶Jumpers also required connecting #3 on first unit to #1 on choke and connecting #3 on second unit to #2 on choke. T5000B choke required.

*Fuses recommended on all units. 25 ampere fuses supplied internally on F136B types, 10 ampere on F236B types.

□Jumper provided in standard common position should be moved or removed as required.

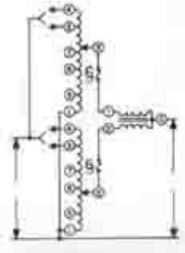
†Motor-driven types use connections for CW rotation, knob on radiator end.

136B TYPES
DO NOT HAVE
TERMINALS
6 OR 7

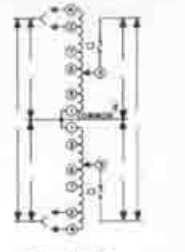
CONNECTIONS
SHOWN ARE FOR
CW KNOB
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CONNECTIONS AND RATINGS

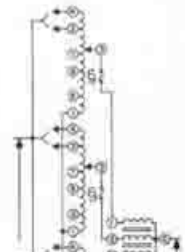
TYPE	CONNECTION	INPUT		OUTPUT				ROTA-TION	TERMINALS							
		VOLTS	HERTZ	CONSTANT CURRENT LOAD		CONSTANT IMPEDANCE LOAD			KNOB ON RADIATOR END			KNOB ON BASE END				
				MAX AMP	MAX KVA	MAX AMP	MAX KVA		INPUT	JUMPER [»]	OUTPUT	INPUT	JUMPER [»]	OUTPUT		
146U-2 M146U-2 [☆]	#1 1-PHASE PARALLEL†	120	50/60	0-120	60	7.2	70	8.4	CW	1-4	1-1, 4-4†	1-C	1-4	1-1, 4-4†	4-C	
				0-140	60	8.4	—	—	CCW	1-4	1-1, 4-4†	4-C	1-4	1-1, 4-4†	1-C	
		240	50/60	0-240	30	7.2	35	8.4	CW	1-2	1-1, 2-2†	1-C	4-5	4-4, 5-5†	4-C	
				0-280	30	8.4	—	—	CCW	4-5	4-4, 5-5†	4-C	1-2	1-1, 2-2†	1-C	
	#2 1-PHASE SERIES	240	50/60	0-240	30	7.2	35	8.4	CW	4-4	1-1	3-3	1-1	4-4	3-3	
				0-280	30	8.4	—	—	CCW	1-1	4-4	3-3	4-4	1-1	3-3	
		120	50/60	0-120	30	6.2	35	7.3	CW	2-2	1-1	3-3	5-5	4-4	3-3	
				0-280	30	8.4	—	—	CCW	5-5	4-4	3-3	2-2	1-1	3-3	
	246U-2 M246U-2 [☆]	#1 1-PHASE PARALLEL†	240	50/60	0-240	30	7.2	38	9.1	CW	1-4	1-1, 4-4†	1-C	1-4	1-1, 4-4†	4-C
					0-280	30	8.4	—	—	CCW	1-4	1-1, 4-4†	4-C	1-4	1-1, 4-4†	1-C
					0-280	30	8.4	—	—	CW	1-2	1-1, 2-2†	1-C	4-5	4-4, 5-5†	4-C
			120	50/60	0-280	30**	3.6†	—	—	CW	4-5	4-4, 5-5†	4-C	1-2	1-1, 2-2†	1-C
0-280					30**	3.6†	—	—	CCW	1-6	1-1, 6-6†	1-C	4-7	4-4, 7-7†	4-C	
0-280					30**	3.6†	—	—	CCW	4-7	4-4, 7-7†	4-C	1-6	1-1, 6-6†	1-C	
#2 1-PHASE SERIES		480	50/60	0-480	15	7.2	19	9.1	CW	4-4	1-1	3-3	1-1	4-4	3-3	
				0-560	15	8.4	—	—	CCW	1-1	4-4	3-3	4-4	1-1	3-3	
				0-560	15	8.4	—	—	CW	2-2	1-1	3-3	5-5	4-4	3-3	
		240	50/60	0-560	15**	3.6†	—	—	CCW	6-6	1-1	3-3	7-7	4-4	3-3	
				0-560	15**	3.6†	—	—	CW	7-7	4-4	3-3	6-6	1-1	3-3	
				0-560	15**	3.6†	—	—	CW	4-1-4	1-1	3-1-3	1-4-1	4-4	3-4-3	
#2 3-PHASE OPEN DELTA	240	50/60	0-240	15	6.2	19	7.9	CCW	1-4-1	4-4	3-4-3	4-1-4	1-1	3-1-3		
			0-280	15	7.3	—	—	CW	2-1-2	1-1	3-1-3	5-4-5	4-4	3-4-3		
			0-280	15	7.3	—	—	CCW	5-4-5	4-4	3-4-3	2-1-2	1-1	3-1-3		
	120	50/60	0-280	15**	3.2†	—	—	CW	6-1-6	1-1	3-1-3	7-4-7	4-4	3-4-3		
			0-280	15**	3.2†	—	—	CCW	7-4-7	4-4	3-4-3	6-1-6	1-1	3-1-3		
			0-280	15**	3.2†	—	—	CW	1-4	1-1, 1, 4-4-4†	1-C	1-4	1-1, 1, 4-4-4†	4-C		
146U-3 M146U-3 [☆]	#3 1-PHASE PARALLEL*	120	50/60	0-120	90	10.8	105	12.6	CCW	1-4	1-1, 1, 4-4-4*	4-C	1-4	1-1, 1, 4-4-4*	1-C	
				0-140	90	12.6	—	—	CW	1-2	1-1, 1, 2-2-2*	1-C	4-5	4-4, 4, 5-5-5*	4-C	
				0-140	90	12.6	—	—	CCW	4-5	4-4, 4, 5-5-5*	4-C	1-2	1-1, 1, 2-2-2*	1-C	
		240	50/60	0-240	30	12.5	35	14.5	CW	4-4-4	1-1	3-3-3	1-1	4-4-4	3-3-3	
				0-240	30	12.5	35	14.5	CCW	1-1-1	4-4-4	3-3-3	4-4-4	1-1-1	3-3-3	
				0-280	30	14.5	—	—	CW	2-2-2	1-1	3-3-3	5-5-5	4-4-4	3-3-3	
	#4 3-PHASE WYE	60	50/60	0-280	30	14.5	—	—	CCW	5-5-5	4-4-4	3-3-3	2-2-2	1-1-1	3-3-3	
				0-280	30	14.5	—	—	CW	1-4	1-1, 1, 4-4-4*	1-C	1-4	1-1, 1, 4-4-4*	4-C	
				0-280	30	14.5	—	—	CCW	1-4	1-1, 1, 4-4-4*	4-C	1-4	1-1, 1, 4-4-4*	1-C	
		#3 1-PHASE PARALLEL*	240	50/60	0-240	45	10.8	57	13.7	CW	1-2	1-1, 1, 2-2-2*	1-C	4-5	4-4, 4, 5-5-5*	4-C
					0-280	45	12.6	—	—	CCW	4-5	4-4, 4, 5-5-5*	4-C	1-2	1-1, 1, 2-2-2*	1-C
					0-280	45	12.6	—	—	CW	1-6	1-1, 1, 6-6-6*	1-C	4-7	4-4, 4, 7-7-7*	4-C
120	50/60		0-280	45**	5.5†	—	—	CCW	4-7	4-4, 4, 7-7-7*	4-C	1-6	1-1, 1, 6-6-6*	1-C		
			0-280	45**	5.5†	—	—	CW	4-4-4	1-1	3-3-3	1-1	4-4-4	3-3-3		
			0-280	45**	5.5†	—	—	CCW	1-1-1	4-4-4	3-3-3	4-4-4	1-1-1	3-3-3		
#4 3-PHASE WYE	480	50/60	0-480	15	12.5	19	15.8	CW	2-2-2	1-1	3-3-3	5-5-5	4-4-4	3-3-3		
			0-560	15	14.5	—	—	CCW	5-5-5	4-4-4	3-3-3	2-2-2	1-1-1	3-3-3		
			0-560	15	14.5	—	—	CW	6-6-6	1-1	3-3-3	7-7-7	4-4-4	3-3-3		
	240	60	0-560	15**	6.3†	—	—	CCW	7-7-7	4-4-4	3-3-3	6-6-6	1-1-1	3-3-3		
			0-560	15**	6.3†	—	—	CW	1-4	1-1, 1, 4-4-4*	1-C	1-4	1-1, 1, 4-4-4*	4-C		
			0-560	15**	6.3†	—	—	CCW	1-4	1-1, 1, 4-4-4*	4-C	1-4	1-1, 1, 4-4-4*	1-C		



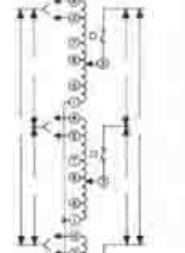
CONNECTION 1



CONNECTION 2



CONNECTION 3



CONNECTION 4

146 TYPES
DO NOT HAVE
TERMINALS
6 OR 7

CONNECTIONS
SHOWN ARE FOR
CW KNOB
ROTATION,
KNOB ON
RADIATOR END
(CCW ROTATION,
KNOB ON BASE END)

*Jumpers also required connecting #3 on first unit to #1 on choke, #3 on second unit to #2 on choke and #3 on third unit to #3 on choke. T6065 choke required for 146 types, T5579B choke for 246 types.
 **Maximum output current in output voltage range from 0 to 25 percent above line voltage. At higher output voltages output current must be reduced according to rating curve Figure B on page 4.
 †Jumpers also required connecting #3 on first unit to #1 on choke and connecting #3 on second unit to #2 on choke. T6053 choke required for 146T types, T5000B choke for 246 types.
 ‡Common used as third leg in 3-phase open delta or neutral in 3-wire single phase series and 4-wire 3-phase wye connections; not used in 2-wire series or 3-wire wye connections.
 §Units must be fused. 30 ampere fuses supplied internally on F146 types, 15 ampere on F246 types. On other types, fuses, must be wired as shown.
 ¶Maximum KVA at maximum output voltage. Maximum KVA at lower output voltages may be calculated from rating curve Figure B on page 4.
 ⓄFuses recommended on all units. 30 ampere fuses supplied internally on F146 types, 15 ampere on F246 types.
 »Jumper provided in standard common position should be moved or removed as required.
 ☆Motor-driven types use connections for CW rotation, knob on radiator end.