



PRODUCT DATA & INSTALLATION

Bulletin T30-TPLP-PDI-12
Part #1087152

TPLP Pre-Assembled Low Profile Evaporators

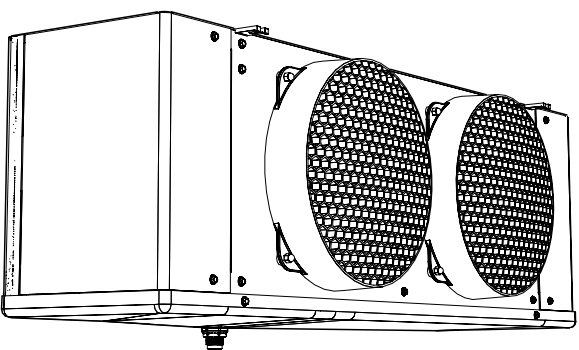
**60
Hz**

PRODUCT SUPPORT
 web: t-rp.com/tplp
 email: evaps@t-rp.com
 call: 1-844-893-3222 x520

scan:

Air & Electric Defrost

Electrical Power:
 115/1/60, 208-230/1/60, 208-230/3/60, 460/1/60



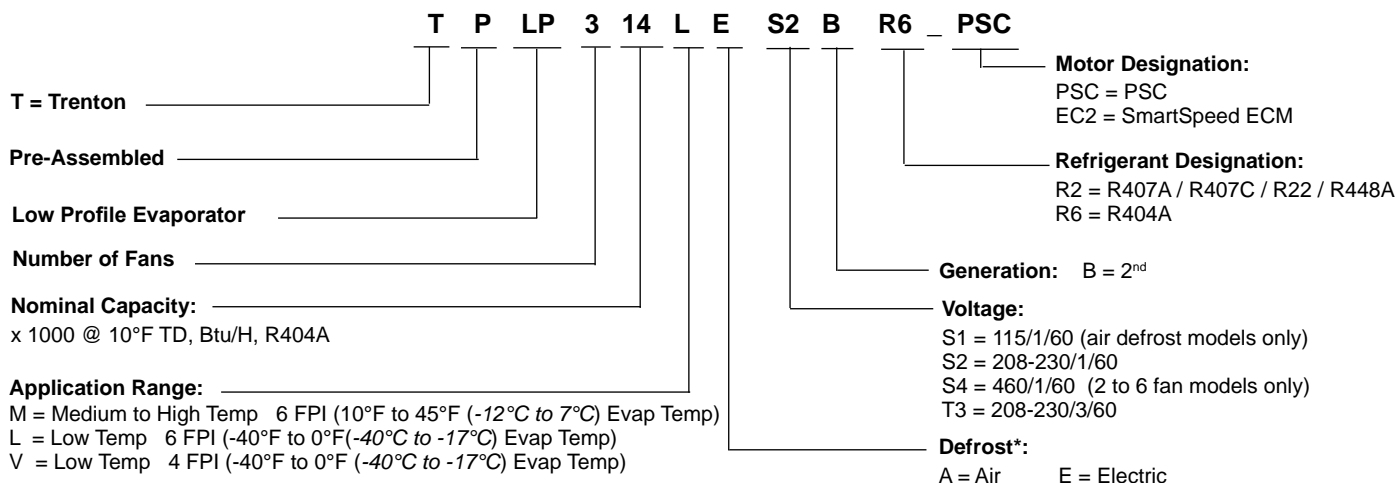
SMARTSPEED™
 FAN MOTOR TECHNOLOGY

See Page 22 for details

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NOMENCLATURE



STANDARD FEATURES

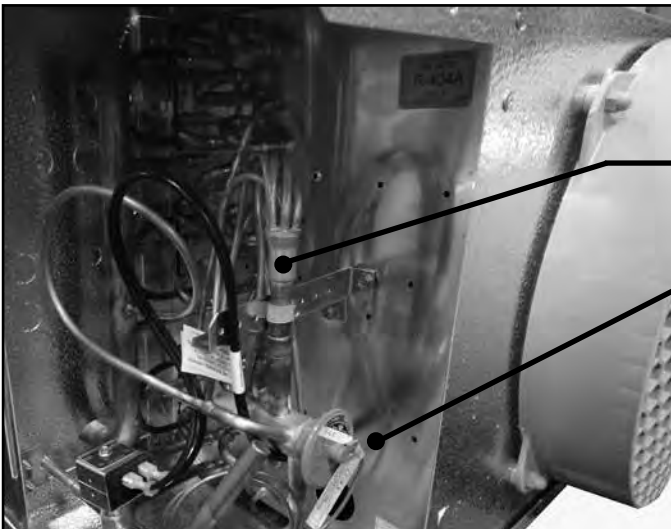
- Compatible with Low GWP Refrigerants
- High efficiency and high strength fan guard
- Front access
- Internally enhanced tubing
- Convenient mounting brackets
- Ample electrical and header compartments
- PSC Motors
- Liquid line solenoid valve wire harness factory installed
- Schrader valve on suction header
- Positive slope, hinged drain pan
- Central drain connections (approximate)
- Universal drain fitting
- Large 3/4" ID (3/4" MPT) drain hole
- **Factory installed expansion valve, solenoid valve and room thermostat**

AVAILABLE OPTIONS

- EC motors with patented SmartSpeed® Technology. See page 16
- Wire fan guard
- Corrosion protection: alternate fin materials and coatings
- Additional options available, please contact factory

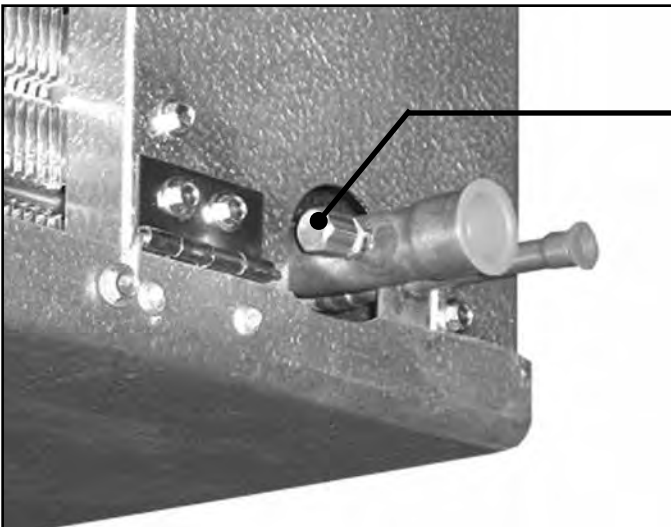


Thermostat Mounted on Front of Unit



Solenoid Valve and TXV Mounted

Solenoid Valve Wire pulled through and labeled on each end



Schrader Valve Located Outside

Medium Temperature Models - Capacity @ 6 F.P.I. *

Medium Temp. Models TPLP		104M	106M	107M	209M	211M	214M	317M	320M	423M	426M	532M	639M	
Number Of Fans		1	1	1	2	2	2	3	3	4	4	5	6	
Capacity BTUH (WATTS)	Evap Temp. 25°F (-4°C)	R407A	4090	5230	6460	8170	10450	13300	16200	19000	21900	24700	30400	37100
		R448A	(1197)	(1530)	(1891)	(2394)	(3059)	(3895)	(4731)	(5567)	(6403)	(7230)	(8902)	(10830)
		R407C	3870	4950	6120	7740	9900	12600	15400	18100	20800	23500	28900	35200
		R404A	(1134)	(1449)	(1791)	(2268)	(2898)	(3690)	(4482)	(5274)	(6066)	(6849)	(8433)	(10260)
		R507	4300	5500	6800	8600	11000	14000	17000	20000	23000	26000	32000	39000
		(1260)	(1610)	(1990)	(2520)	(3220)	(4100)	(4980)	(5860)	(6740)	(7610)	(9370)	(11400)	
		R22	4090	5230	6460	8170	10500	13300	16200	19000	21900	24700	30400	37100
			(1197)	(1530)	(1891)	(2394)	(3059)	(3895)	(4731)	(5567)	(6403)	(7230)	(8902)	(10830)
Air Flow	CFM (L/S)	1010 (477)	950 (458)	900 (425)	2020 (953)	1910 (901)	1800 (850)	2860 (1350)	2700 (1274)	3810 (1798)	3600 (1699)	4500 (2124)	5400 (2549)	
Refrigerant ** Charge R407A	LB. (KG)	0.7 (0.3)	1.1 (0.5)	1.5 (0.7)	1.3 (0.6)	1.4 (0.6)	2.0 (0.9)	3.0 (1.4)	4.0 (1.8)	3.9 (1.8)	3.3 (1.5)	6.5 (2.9)	7.8 (3.5)	

Low Temperature Models - Capacity @ 6 F.P.I. *

Low Temp. Models TPLP		104L	105L	106L	207L	209L	211L	314L	317L	419L	422L	527L	631L	
Number Of Fans		1	1	1	2	2	2	3	3	4	4	5	6	
Capacity BTUH (WATTS)	Evap Temp. -20°F (-29°C)	R407A	3610	4560	5510	7030	8550	10500	13300	16200	18100	20900	25700	29500
		R448A	(1055)	(1340)	(1615)	(2062)	(2508)	(3059)	(3895)	(4731)	(5292)	(6118)	(7515)	(8626)
		R404A	3800	4800	5800	7400	9000	11000	14000	17000	19000	22000	27000	31000
		R507	(1110)	(1410)	(1700)	(2170)	(2640)	(3220)	(4100)	(4980)	(5570)	(6440)	(7910)	(9080)
Air Flow	CFM (L/S)	1010 (477)	950 (458)	900 (425)	2020 (953)	1910 (901)	1800 (850)	2860 (1350)	2700 (1274)	3810 (1798)	3600 (1699)	4500 (2124)	5400 (2549)	
Refrigerant ** Charge R407A	LB. (KG)	0.7 (0.3)	1.1 (0.5)	1.5 (0.7)	1.3 (0.6)	1.4 (0.6)	2.0 (0.9)	3.0 (1.4)	4.0 (1.8)	3.9 (1.8)	3.3 (1.5)	6.5 (2.9)	7.8 (3.5)	

Low Temperature Models - Capacity @ 4 F.P.I. *

Low Temp. 4 FPI Models TPLP		103V	104V	105V	206V	208V	209V	312V	315V	416V	419V	523V	627V	
Number Of Fans		1	1	1	2	2	2	3	3	4	4	5	6	
Capacity BTUH (WATTS)	Evap Temp. -20°F (-29°C)	R407A	2850	3900	4750	6080	7410	8840	11400	14300	15200	18100	21900	25700
		R448A	(836)	(1140)	(1397)	(1786)	(2176)	(2584)	(3344)	(4171)	(4456)	(5292)	(6403)	(7515)
		R404A	3000	4100	5000	6400	7800	9300	12000	15000	16000	19000	23000	27000
		R507	(880)	(1200)	(1470)	(1880)	(2290)	(2720)	(3520)	(4390)	(4690)	(5570)	(6740)	(7910)
Air Flow	CFM (L/S)	1010 (477)	950 (458)	900 (425)	2020 (953)	1910 (901)	1800 (850)	2860 (1350)	2700 (1274)	3810 (1798)	3600 (1699)	4500 (2124)	5400 (2549)	
Refrigerant ** Charge R407A	LB. (KG)	0.7 (0.3)	1.1 (0.5)	1.5 (0.7)	1.3 (0.6)	1.4 (0.6)	2.0 (0.9)	3.0 (1.4)	4.0 (1.8)	3.9 (1.8)	3.3 (1.5)	6.5 (2.9)	7.8 (3.5)	

Capacities rated using 10°F (5.6°C) TD & 100°F (38°C) liquid temperature.

Capacities at other TD within a range of 8 to 15 °F (4.4 to 8.3°C) are directly proportional to TD, or use formula: Capacity = Rated capacity ÷ 10 x TD.

For capacities at TD outside of range 8 to 15 °F (4.4 to 8.3°C), or liquid temperature lower than 75°F (24°), consult factory.

Capacities for R448A, R407A and R407C are based on mean temperature. Mean temperature is the average temperature between the saturated suction temperature and the temperature feeding the evaporator. For dew point ratings, consult factory.

For R449A, use R448A data.

* CAPACITY CORRECTION FACTORS FOR LOW TEMPERATURE UNITS

SATURATED SUCTION TEMPERATURE °F (°C)	0 (-17.8)	-10 (23.3)	-20 (-28.9)	-30 (-34.4)	-40 (-40)
FACTOR	1.06	1.03	1.0	0.92	0.85

NO CORRECTION FACTOR REQUIRED FOR MEDIUM TEMP. UNITS

** REFRIGERANT CHARGE CONVERSION FACTORS

R448A	R407C	R404A	R507	R22	R134a
0.96	0.99	0.92	0.93	1.02	1.03

**ELECTRICAL DATA
115/1/60 - AIR DEFROST MODELS**

MODEL TPLP	FPI	FAN MOTORS										
		QTY.	PSC MOTORS					EC MOTORS				
			HP	FLA TOTAL	WATTS	MIN. CIRC. AMPACITY (A)	MAX. FUSE (AMPS)	HP	FLA TOTAL	WATTS	MIN. CIRC. AMPACITY (A)	MAX. FUSE (AMPS)
104MAS1	6	1	1/15	1.0	100	1.3	15	1/15	1.0	60	1.3	15
106MAS1		1	1/15	1.0	100	1.3	15	1/15	1.0	60	1.3	15
107MAS1		1	1/15	1.0	100	1.3	15	1/15	1.0	60	1.3	15
209MAS1		2	1/15	2.0	200	2.3	15	1/15	2.0	120	2.3	15
211MAS1		2	1/15	2.0	200	2.3	15	1/15	2.0	120	2.3	15
214MAS1		2	1/15	2.0	200	2.3	15	1/15	2.0	120	2.3	15
317MAS1		3	1/15	3.0	300	3.3	15	1/15	3.0	180	3.3	15
320MAS1		3	1/15	3.0	300	3.3	15	1/15	3.0	180	3.3	15
423MAS1		4	1/15	4.0	400	4.3	15	1/15	4.0	240	4.3	15
426MAS1		4	1/15	4.0	400	4.3	15	1/15	4.0	240	4.3	15
532MAS1		5	1/15	5.0	500	5.3	15	1/15	5.0	300	5.3	15
639MAS1		6	1/15	6.0	600	6.3	15	1/15	6.0	360	6.3	15

**ELECTRICAL DATA
208-230/1/60 - AIR DEFROST MODELS**

MODEL TPLP	FPI	FAN MOTORS										
		QTY.	PSC MOTORS					EC MOTORS				
			HP	FLA TOTAL	WATTS	MIN. CIRC. AMPACITY (A)	MAX. FUSE (AMPS)	HP	FLA TOTAL	WATTS	MIN. CIRC. AMPACITY (A)	MAX. FUSE (AMPS)
104MAS2	6	1	1/15	0.5	100	0.6	15	1/15	0.6	60	0.8	15
106MAS2		1	1/15	0.5	100	0.6	15	1/15	0.6	60	0.8	15
107MAS2		1	1/15	0.5	100	0.6	15	1/15	0.6	60	0.8	15
209MAS2		2	1/15	1.0	200	1.1	15	1/15	1.2	120	1.4	15
211MAS2		2	1/15	1.0	200	1.1	15	1/15	1.2	120	1.4	15
214MAS2		2	1/15	1.0	200	1.1	15	1/15	1.2	120	1.4	15
317MAS2		3	1/15	1.5	300	1.6	15	1/15	1.8	180	2.0	15
320MAS2		3	1/15	1.5	300	1.6	15	1/15	1.8	180	2.0	15
423MAS2		4	1/15	2.0	400	2.1	15	1/15	2.4	240	2.6	15
426MAS2		4	1/15	2.0	400	2.1	15	1/15	2.4	240	2.6	15
532MAS2		5	1/15	2.5	500	2.6	15	1/15	3.0	300	3.2	15
639MAS2		6	1/15	3.0	600	3.1	15	1/15	3.6	360	3.8	15

**ELECTRICAL DATA
460/1/60 - AIR DEFROST MODELS**

MODEL TPLP	FPI	FAN MOTORS					
		QUANTITY	PSC MOTORS				
			HP	FLA TOTAL	WATTS	MIN. CIRC. AMPACITY (A)	MAX. FUSE (AMPS)
209MAS4	6	2	1/15	0.8	200	0.9	15
211MAS4		2	1/15	0.8	200	0.9	15
214MAS4		2	1/15	0.8	200	0.9	15
317MAS4		3	1/15	1.2	300	1.3	15
320MAS4		3	1/15	1.2	300	1.3	15
423MAS4		4	1/15	1.6	400	1.7	15
426MAS4		4	1/15	1.6	400	1.7	15
532MAS4		5	1/15	2.0	500	2.1	15
639MAS4	6	1/15	2.4	600	2.5	15	

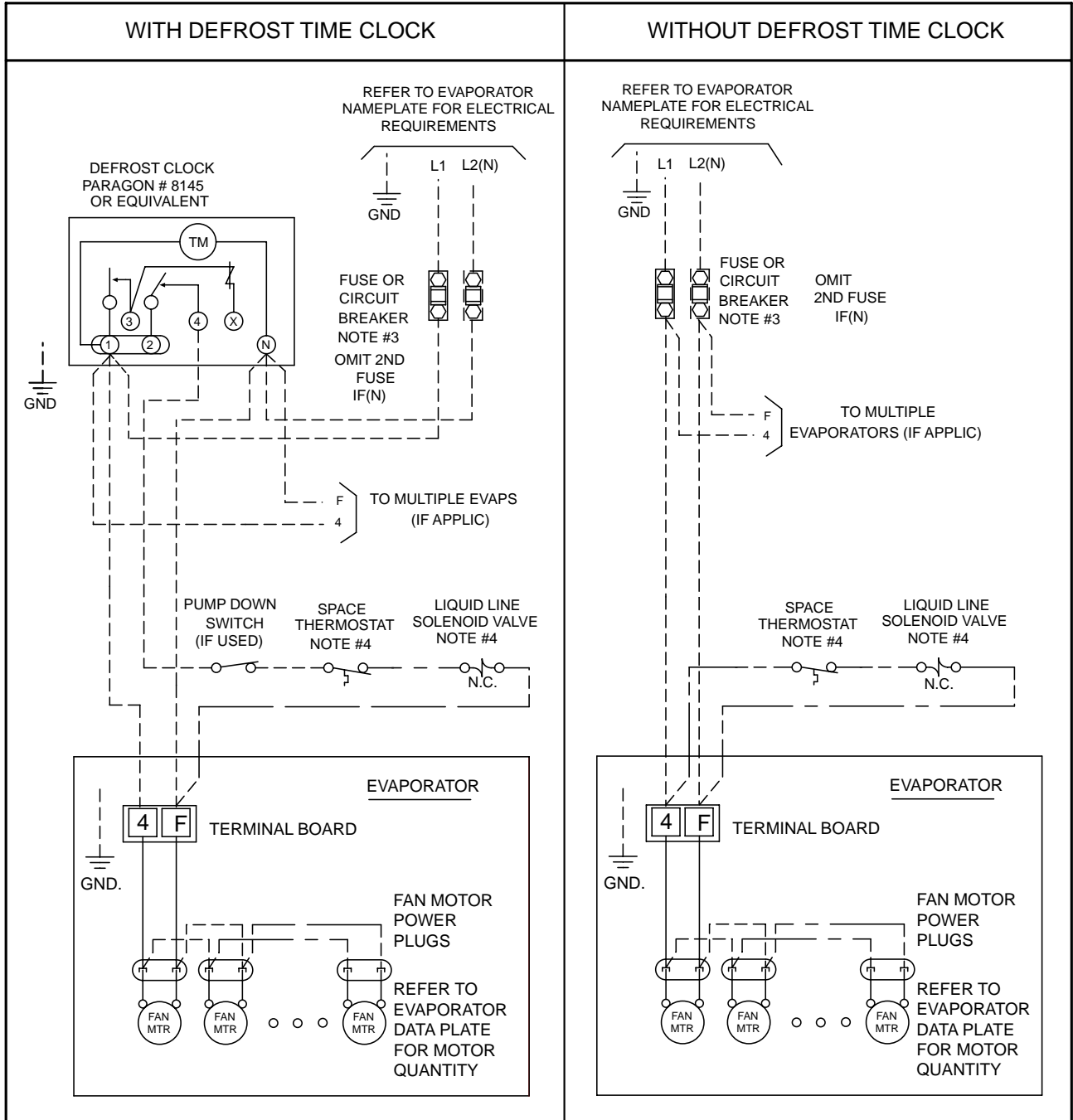
**ELECTRICAL DATA -
208-230/1/60 & 208-230/3/60
ELECTRIC DEFROST MODELS**

MODEL TPLP	FPI	FAN MOTORS										DEFROST HEATERS							
		QTY.	PSC MOTORS					EC MOTORS					TOTAL WATTS	208-230/1/60			208-230/3/60		
			HP	FLA TOTAL	WATTS	MCA (A)	MAX. FUSE (AMPS)	HP	FLA TOTAL	WATTS	MCA (A)	MAX. FUSE (AMPS)		TOTAL AMPS	MCA (A)	MAX. FUSE (AMPS)	TOTAL AMPS	MCA (A)	MAX. FUSE (AMPS)
104ME*	6	1	1/15	0.5	100	0.6	15	1/15	0.6	60	0.8	15	1060	4.6	5.8	15	3.0	3.8	15
106ME*		1	1/15	0.5	100	0.6	15	1/15	0.6	60	0.8	15	1060	4.6	5.8	15	3.0	3.8	15
107ME*		1	1/15	0.5	100	0.6	15	1/15	0.6	60	0.8	15	1060	4.6	5.8	15	3.0	3.8	15
209ME*		2	1/15	1.0	200	1.1	15	1/15	1.2	120	1.4	15	1890	8.2	10.3	15	5.3	6.7	15
211ME*		2	1/15	1.0	200	1.1	15	1/15	1.2	120	1.4	15	1890	8.2	10.3	15	5.3	6.7	15
214ME*		2	1/15	1.0	200	1.1	15	1/15	1.2	120	1.4	15	1890	8.2	10.3	15	5.3	6.7	15
317ME*		3	1/15	1.5	300	1.6	15	1/15	1.8	180	2.0	15	2730	11.9	14.8	15	7.7	10	15
320ME*		3	1/15	1.5	300	1.6	15	1/15	1.8	180	2.0	15	2730	11.9	14.8	15	7.7	10	15
423ME*		4	1/15	2.0	400	2.1	15	1/15	2.4	240	2.6	15	3560	15.5	19.3	20	10	12	15
426ME*		4	1/15	2.0	400	2.1	15	1/15	2.4	240	2.6	15	3560	15.5	19.3	20	10	12	15
532ME*		5	1/15	2.5	500	2.6	15	1/15	3.0	300	3.2	15	4400	19.1	23.9	25	12	15.1	20
639ME*		6	1/15	3.0	600	3.1	15	1/15	3.6	360	3.8	15	5230	22.7	28.4	30	15	18	20
104LE*	6	1	1/15	0.5	100	0.6	15	1/15	0.6	60	0.75	15	1060	4.6	5.8	15	3.0	3.8	15
105LE*		1	1/15	0.5	100	0.6	15	1/15	0.6	60	0.75	15	1060	4.6	5.8	15	3.0	3.8	15
106LE*		1	1/15	0.5	100	0.6	15	1/15	0.6	60	0.75	15	1060	4.6	5.8	15	3.0	3.8	15
207LE*		2	1/15	1.0	200	1.1	15	1/15	1.2	120	1.4	15	1890	8.2	10.3	15	5.3	6.7	15
209LE*		2	1/15	1.0	200	1.1	15	1/15	1.2	120	1.4	15	1890	8.2	10.3	15	5.3	6.7	15
211LE*		2	1/15	1.0	200	1.1	15	1/15	1.2	120	1.4	15	1890	8.2	10.3	15	5.3	6.7	15
314LE*		3	1/15	1.5	300	1.6	15	1/15	1.8	180	2.0	15	2730	11.9	14.8	15	7.7	10	15
317LE*		3	1/15	1.5	300	1.6	15	1/15	1.8	180	2.0	15	2730	11.9	14.8	15	7.7	10	15
419LE*		4	1/15	2.0	400	2.1	15	1/15	2.4	240	2.6	15	3560	15.5	19.3	20	10	12	15
422LE*		4	1/15	2.0	400	2.1	15	1/15	2.4	240	2.6	15	3560	15.5	19.3	20	10	12	15
527LE*		5	1/15	2.5	500	2.6	15	1/15	3.0	300	3.2	15	4400	19.1	23.9	25	12	15.1	20
631LE*		6	1/15	3.0	600	3.1	15	1/15	3.6	360	3.8	15	5230	22.7	28.4	30	15	18	20
103VE*	4	1	1/15	0.5	100	0.6	15	1/15	0.6	60	0.75	15	1060	4.6	5.8	15	3.0	3.8	15
104VE*		1	1/15	0.5	100	0.6	15	1/15	0.6	60	0.75	15	1060	4.6	5.8	15	3.0	3.8	15
105VE*		1	1/15	0.5	100	0.6	15	1/15	0.6	60	0.75	15	1060	4.6	5.8	15	3.0	3.8	15
206VE*		2	1/15	1.0	200	1.1	15	1/15	1.2	120	1.4	15	1890	8.2	10.3	15	5.3	6.7	15
208VE*		2	1/15	1.0	200	1.1	15	1/15	1.2	120	1.4	15	1890	8.2	10.3	15	5.3	6.7	15
209VE*		2	1/15	1.0	200	1.1	15	1/15	1.2	120	1.4	15	1890	8.2	10.3	15	5.3	6.7	15
312VE*		3	1/15	1.5	300	1.6	15	1/15	1.8	180	2.0	15	2730	11.9	14.8	15	7.7	10	15
315VE*		3	1/15	1.5	300	1.6	15	1/15	1.8	180	2.0	15	2730	11.9	14.8	15	7.7	10	15
416VE*		4	1/15	2.0	400	2.1	15	1/15	2.4	240	2.6	15	3560	15.5	19.3	20	10	12	15
419VE*		4	1/15	2.0	400	2.1	15	1/15	2.4	240	2.6	15	3560	15.5	19.3	20	10	12	15
523VE*		5	1/15	2.5	500	2.6	15	1/15	3.0	300	3.2	15	4400	19.1	23.9	25	12	15.1	20
627VE*		6	1/15	3.0	600	3.1	15	1/15	3.6	360	3.8	15	5230	22.7	28.4	30	15	18	20

* = S2 or T3. Refer to Nomenclature for details

MODEL TPLP	FPI	FAN MOTORS					DEFROST HEATERS				
		QTY.	PSC MOTORS				TOTAL WATTS	TOTAL AMPS	MCA (A)	MAX. FUSE (AMPS)	
			HP	FLA TOTAL	WATTS	MCA (A)					MAX. FUSE (AMPS)
209MES4	6	2	1/15	0.8	200	0.9	15	1890	4.1	5.1	15
211MES4		2	1/15	0.8	200	0.9	15	1890	4.1	5.1	15
214MES4		2	1/15	0.8	200	0.9	15	1890	4.1	5.1	15
317MES4		3	1/15	1.2	300	1.3	15	2730	5.9	7.4	15
320MES4		3	1/15	1.2	300	1.3	15	2730	5.9	7.4	15
423MES4		4	1/15	1.6	400	1.7	15	3560	7.7	9.7	15
426MES4		4	1/15	1.6	400	1.7	15	3560	7.7	9.7	15
532MES4		5	1/15	2.0	500	2.1	15	4400	9.6	12.0	15
639MES4		6	1/15	2.4	600	2.5	15	5230	11.4	14.2	15
207LES4	6	2	1/15	0.8	200	0.9	15	1890	4.1	5.1	15
209LES4		2	1/15	0.8	200	0.9	15	1890	4.1	5.1	15
211LES4		2	1/15	0.8	200	0.9	15	1890	4.1	5.1	15
314LES4		3	1/15	1.2	300	1.3	15	2730	5.9	7.4	15
317LES4		3	1/15	1.2	300	1.3	15	2730	5.9	7.4	15
419LES4		4	1/15	1.6	400	1.7	15	3560	7.7	9.7	15
422LES4		4	1/15	1.6	400	1.7	15	3560	7.7	9.7	15
527LES4		5	1/15	2.0	500	2.1	15	4400	9.6	12.0	15
631LES4		6	1/15	2.4	600	2.5	15	5230	11.4	14.2	15
206VES4	4	2	1/15	0.8	200	0.9	15	1890	4.1	5.1	15
208VES4		2	1/15	0.8	200	0.9	15	1890	4.1	5.1	15
209VES4		2	1/15	0.8	200	0.9	15	1890	4.1	5.1	15
312VES4		3	1/15	1.2	300	1.3	15	2730	5.9	7.4	15
315VES4		3	1/15	1.2	300	1.3	15	2730	5.9	7.4	15
416VES4		4	1/15	1.6	400	1.7	15	3560	7.7	9.7	15
419VES4		4	1/15	1.6	400	1.7	15	3560	7.7	9.7	15
523VES4		5	1/15	2.0	500	2.1	15	4400	9.6	12.0	15
627VES4	6	1/15	2.4	600	2.5	15	5230	11.4	14.2	15	

WIRING DIAGRAM - 115/1/60, 208-230/1/60 STANDARD PSC MOTORS AIR DEFROST MODELS



NOTES

- 1). USE COPPER CONDUCTORS ONLY
- 2). USE 75°C WIRE (OR HIGHER)
- 3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS AND DEFROST HEATERS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.
- 4). MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR .

1-LP AIR 09/06

TERMINALS

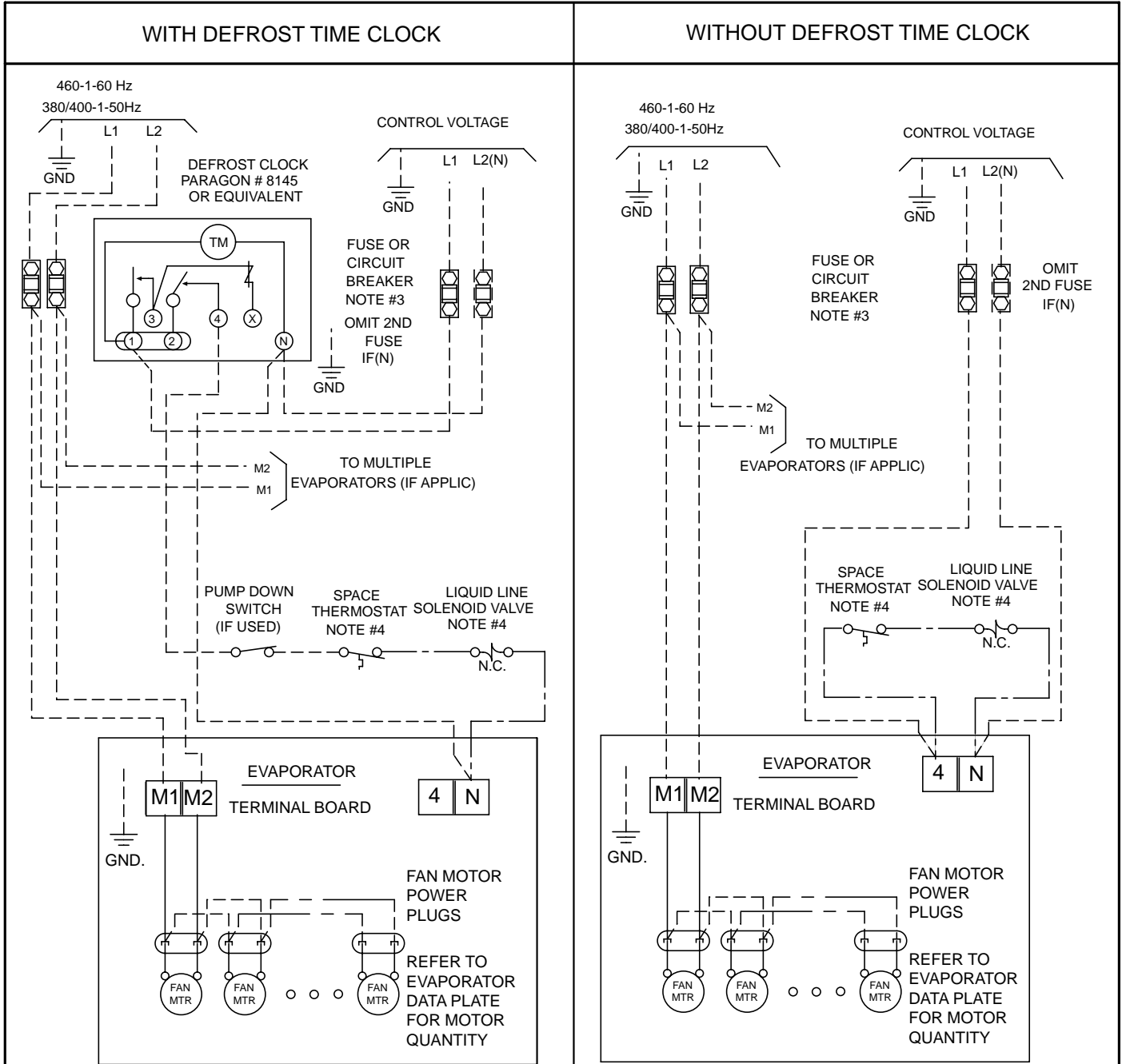
- -COMPONENT TERMINAL
- -TERMINAL BLOCK TERMINAL

CONDUCTORS/WIRING

- FACTORY WIRING
- - - - - WIRING BY OTHERS
- OPTIONAL FACTORY OR BY OTHERS

ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

WIRING DIAGRAM - 460/1/60 STANDARD PSC MOTORS AIR DEFROST MODELS



NOTES

- 1). USE COPPER CONDUCTORS ONLY
- 2). USE 75°C WIRE (OR HIGHER)
- 3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS AND DEFROST HEATERS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.
- 4). MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR .

6-LP 460 AIR 09/06

TERMINALS

- -COMPONENT TERMINAL
- -TERMINAL BLOCK TERMINAL

CONDUCTORS/WIRING

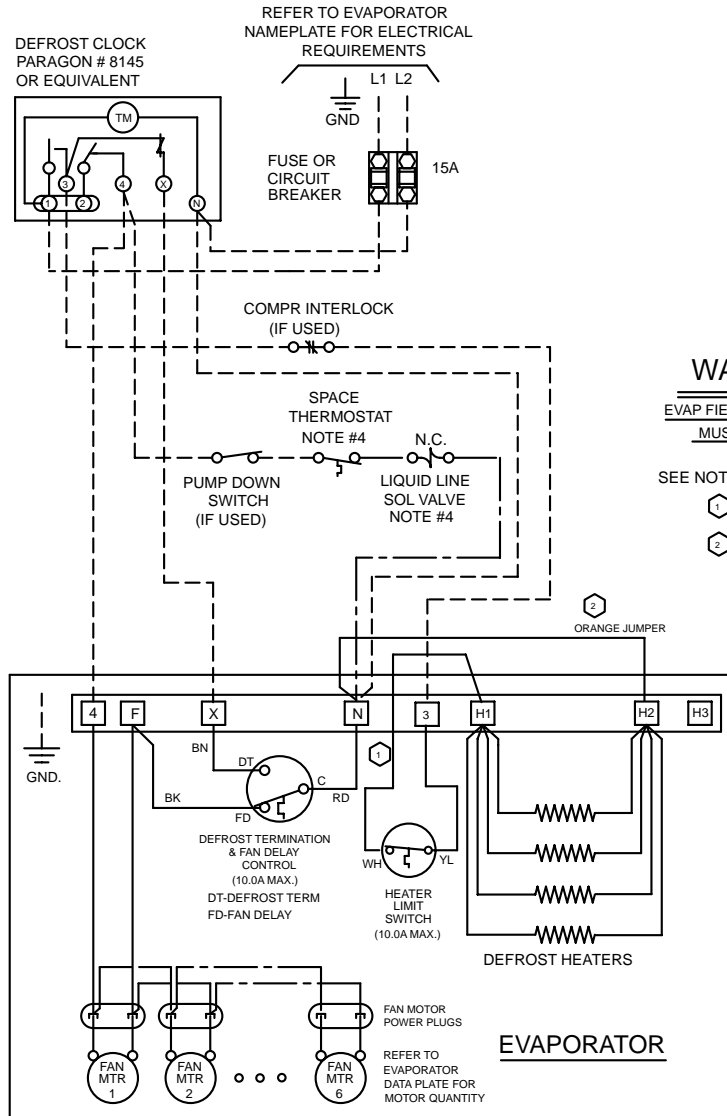
- FACTORY WIRING
- - - - - WIRING BY OTHERS
- OPTIONAL FACTORY OR BY OTHERS

ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

WIRING DIAGRAM - 208-230/1/60 STANDARD PSC MOTORS

ELECTRIC DEFROST MODELS - SINGLE EVAPORATOR 10A MAX.

FOR ALL MODELS WITHOUT DEFROST HEATER CONTACTOR
USING MAXIMUM 15A HEATER OVERCURRENT PROTECTION



NOTES

- 1.) USE COPPER CONDUCTORS ONLY
- 2.) USE 75°C WIRE (OR HIGHER)
- 3.) OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS AND DEFROST HEATERS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.
- 4.) MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR

TERMINALS

- - COMPONENT TERMINAL
- - TERMINAL BLOCK TERMINAL

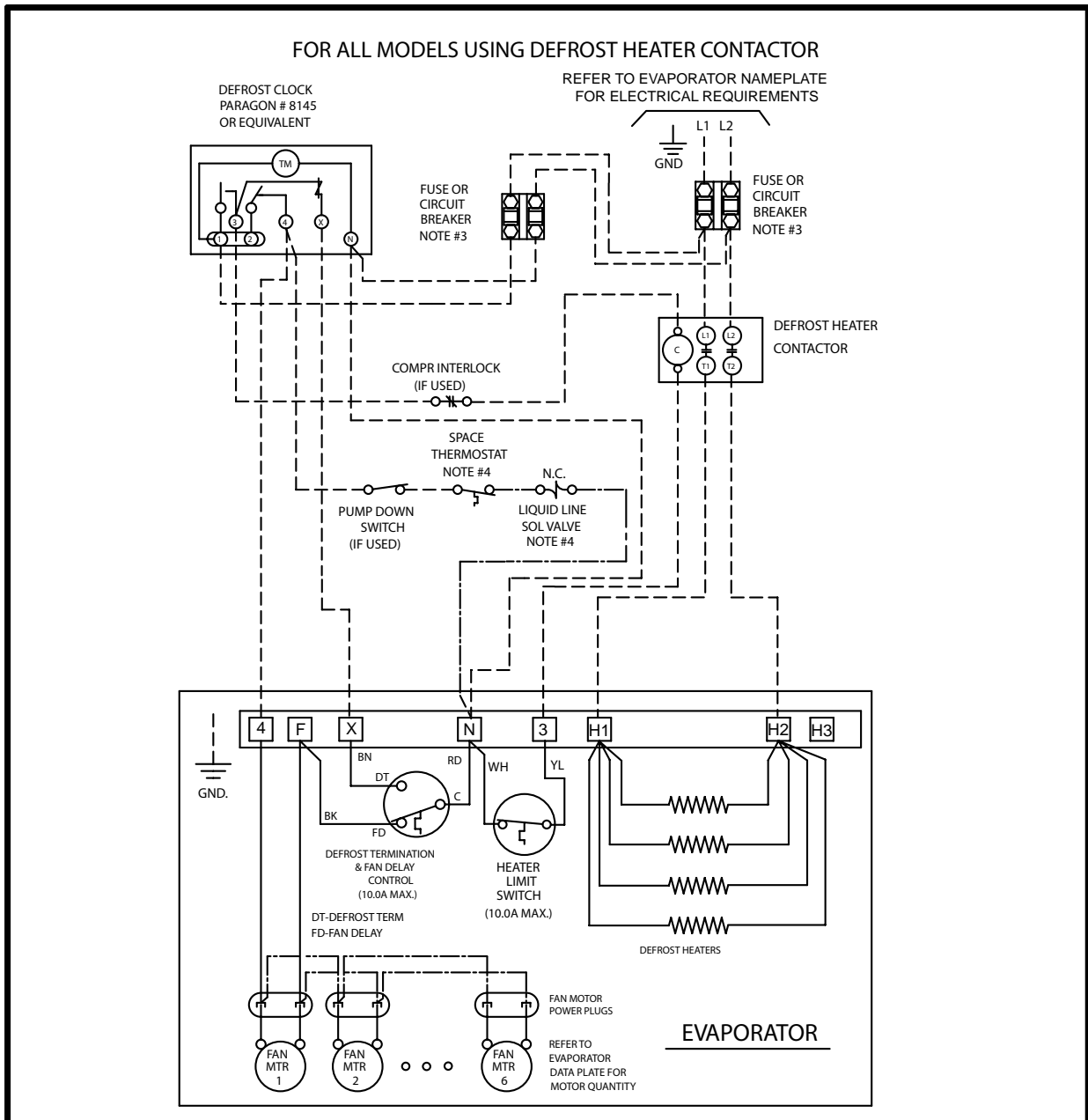
CONDUCTORS/WIRING

- FACTORY WIRING
- WIRING BY OTHERS
- - - - - OPTIONAL FACTORY OR BY OTHERS

ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

WIRING DIAGRAM - 208-230/1/60 STANDARD PSC MOTORS

ELECTRIC DEFROST MODELS - SINGLE EVAPORATOR



NOTES

- 1). USE COPPER CONDUCTORS ONLY
- 2). USE 75°C WIRE (OR HIGHER)
- 3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS AND DEFROST HEATERS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.
- 4.) MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR

TERMINALS

- -COMPONENT TERMINAL
- -TERMINAL BLOCK TERMINAL

CONDUCTORS/WIRING

- FACTORY WIRING
- - - - - WIRING BY OTHERS
- · - · - · OPTIONAL FACTORY OR BY OTHERS

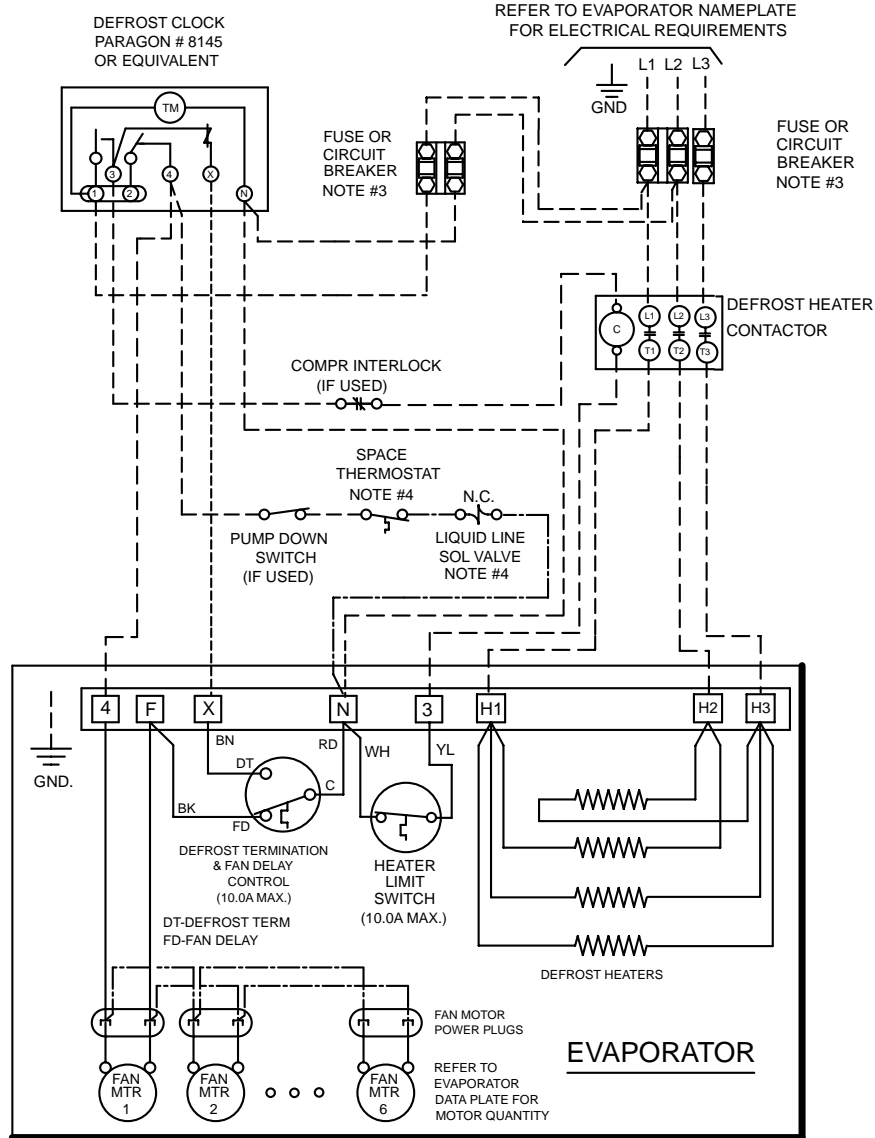
ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

3-LP ED CONTACTOR SINGLE 12/07

STANDARD PSC MOTORS

ELECTRIC DEFROST MODELS - SINGLE EVAPORATOR

FOR ALL MODELS USING 3 PHASE DEFROST HEATER CONTACTOR



NOTES

- 1). USE COPPER CONDUCTORS ONLY
- 2). USE 75°C WIRE (OR HIGHER)
- 3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS AND DEFROST HEATERS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.
- 4.) MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR

TERMINALS

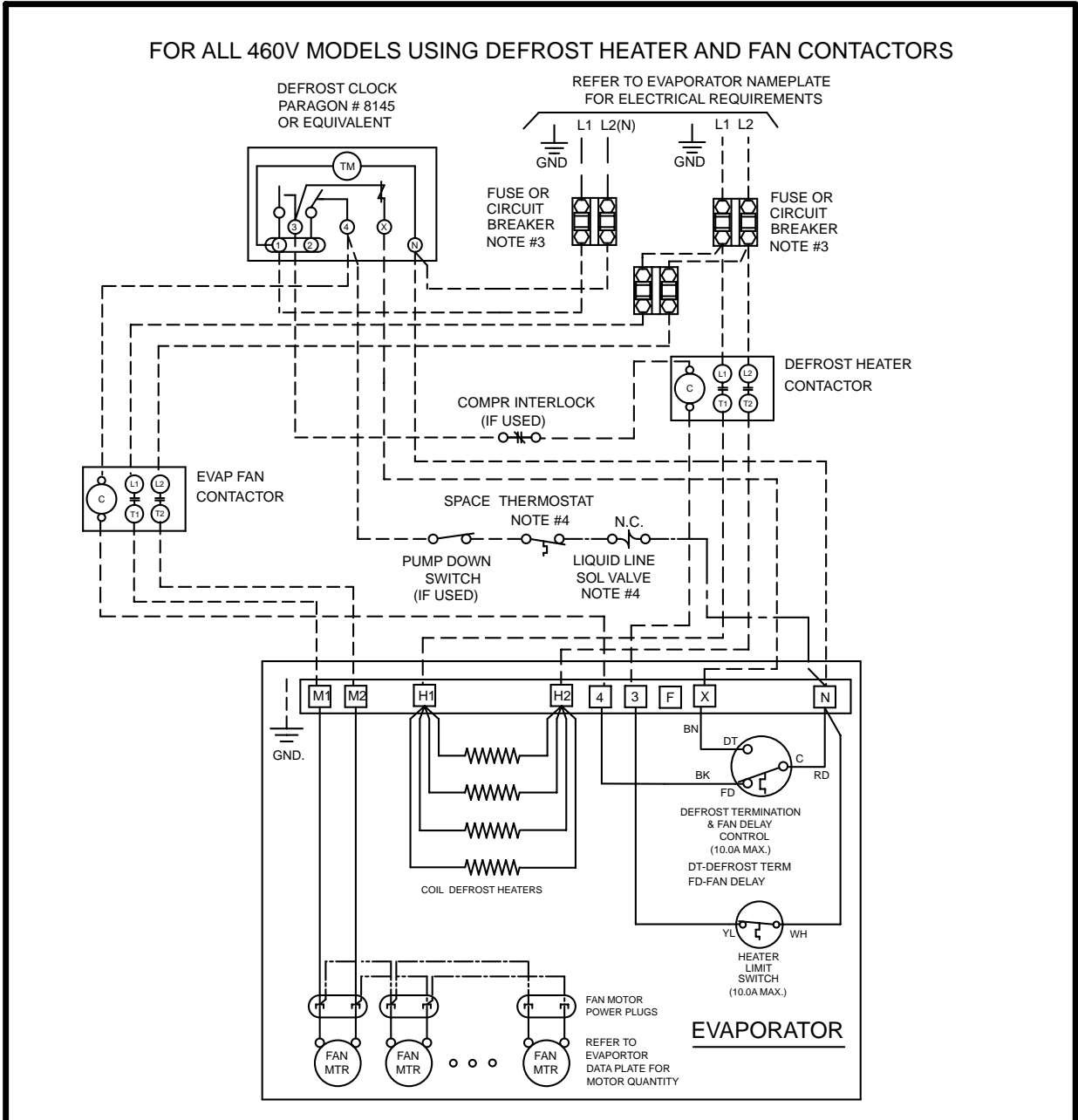
- O -COMPONENT TERMINAL
- -TERMINAL BLOCK TERMINAL

CONDUCTORS/WIRING

- FACTORY WIRING
- - - - - WIRING BY OTHERS
- OPTIONAL FACTORY OR BY OTHERS

ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

3A-LP ED 3ph.CONTACTOR SINGLE 12/07



NOTES

- 1). USE COPPER CONDUCTORS ONLY
- 2). USE 75°C WIRE (OR HIGHER)
- 3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS AND DEFROST HEATERS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.
- 4.) MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR

7-LP ED CONTACTOR SINGLE 12/07

TERMINALS

- -COMPONENT TERMINAL
- -TERMINAL BLOCK TERMINAL

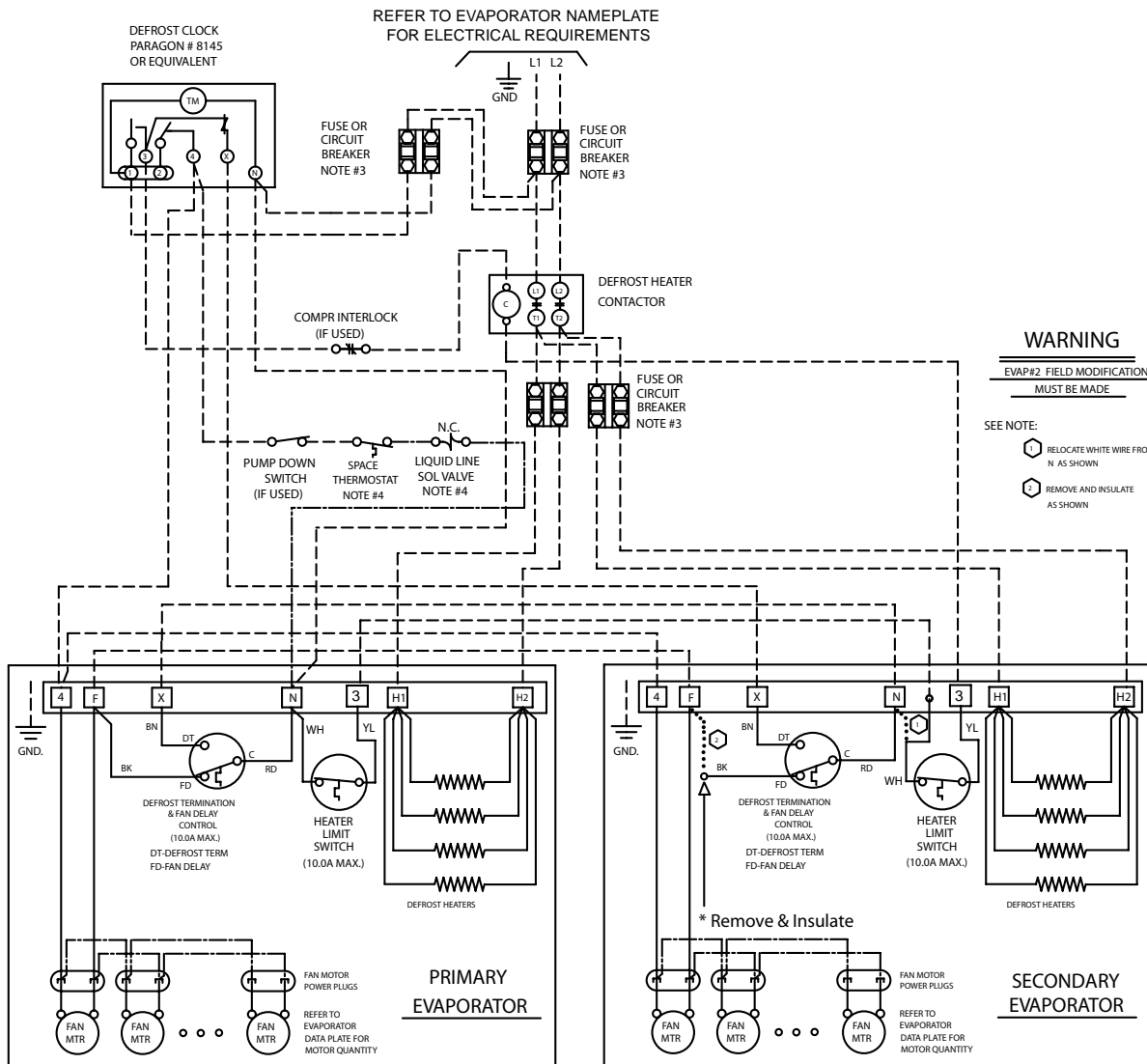
CONDUCTORS/WIRING

- FACTORY WIRING
- - - - - WIRING BY OTHERS
- OPTIONAL FACTORY OR BY OTHERS

ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

ELECTRIC DEFROST MODELS - MULTIPLE EVAPORATORS

FOR ALL MODELS USING DEFROST HEATER CONTACTOR



* Fan delay not used on second evap / use fan contactor if total fan amps exceeds 10A

NOTES

- 1). USE COPPER CONDUCTORS ONLY
- 2). USE 75°C WIRE (OR HIGHER)
- 3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS AND DEFROST HEATERS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.
- 4). MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR

4-LP ED CONTACTOR MULTI 12/07

TERMINALS

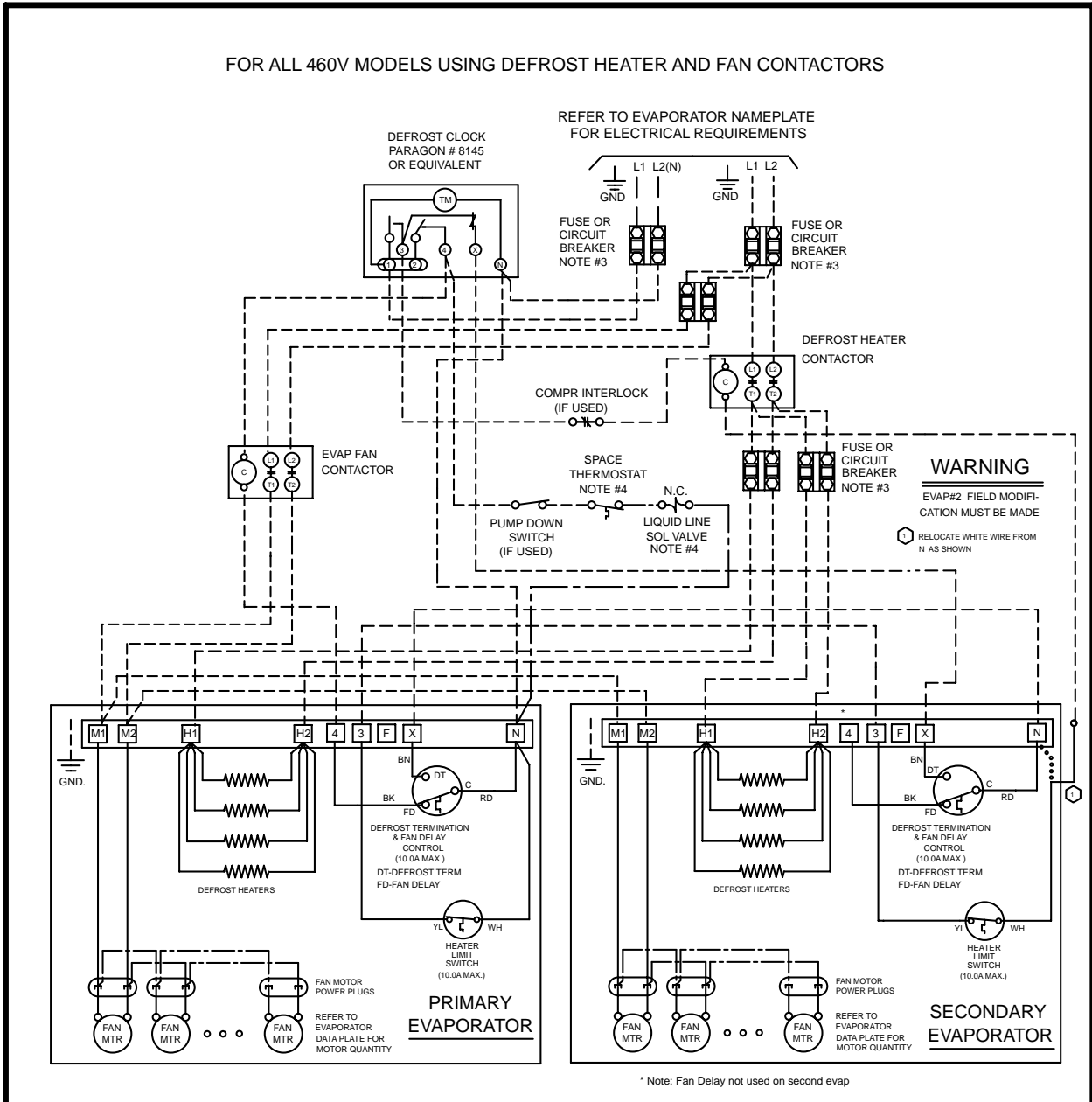
- - COMPONENT TERMINAL
- - TERMINAL BLOCK TERMINAL

CONDUCTORS/WIRING

- FACTORY WIRING
- - - - - WIRING BY OTHERS
- · — · — · OPTIONAL FACTORY OR BY OTHERS

ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

ELECTRIC DEFROST MODELS - MULTIPLE EVAPORATORS



NOTES

- 1.) USE COPPER CONDUCTORS ONLY
- 2.) USE 75°C WIRE (OR HIGHER)
- 3.) OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS AND DEFROST HEATERS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.
- 4.) MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR

TERMINALS

- - COMPONENT TERMINAL
- - TERMINAL BLOCK TERMINAL

CONDUCTORS/WIRING

- FACTORY WIRING
- WIRING BY OTHERS
- - - - - OPTIONAL FACTORY OR BY OTHERS

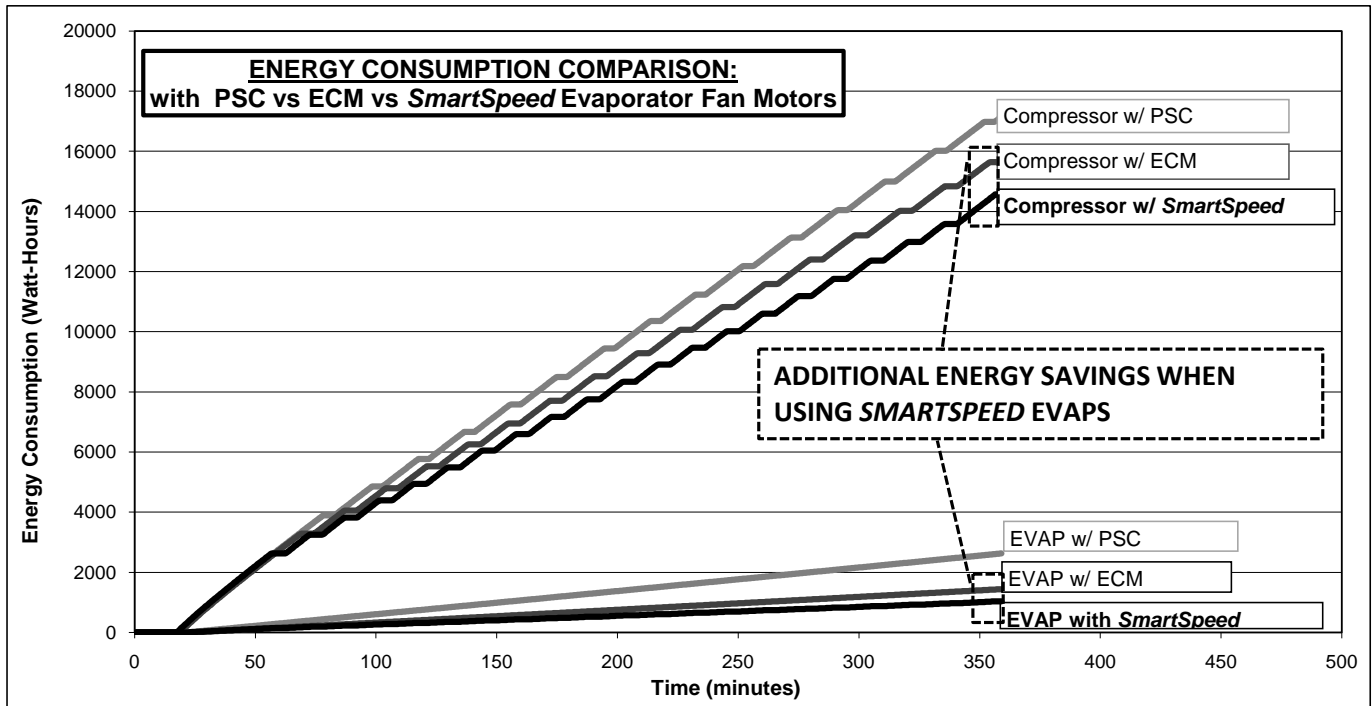
ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

US Patents Nos.
8,635,883
& 9,151,525

DESIGN FEATURES



- Standard on all EC Motors
- NO special controls required.
- Refrigeration mode – EC motor operates at full speed.
Consumption 60 W per motor
- Off Cycle mode – EC motor operates at reduced speed.
Consumption 13 W per motor.
- Energy saving benefit on motor and compressor wattage consumption:



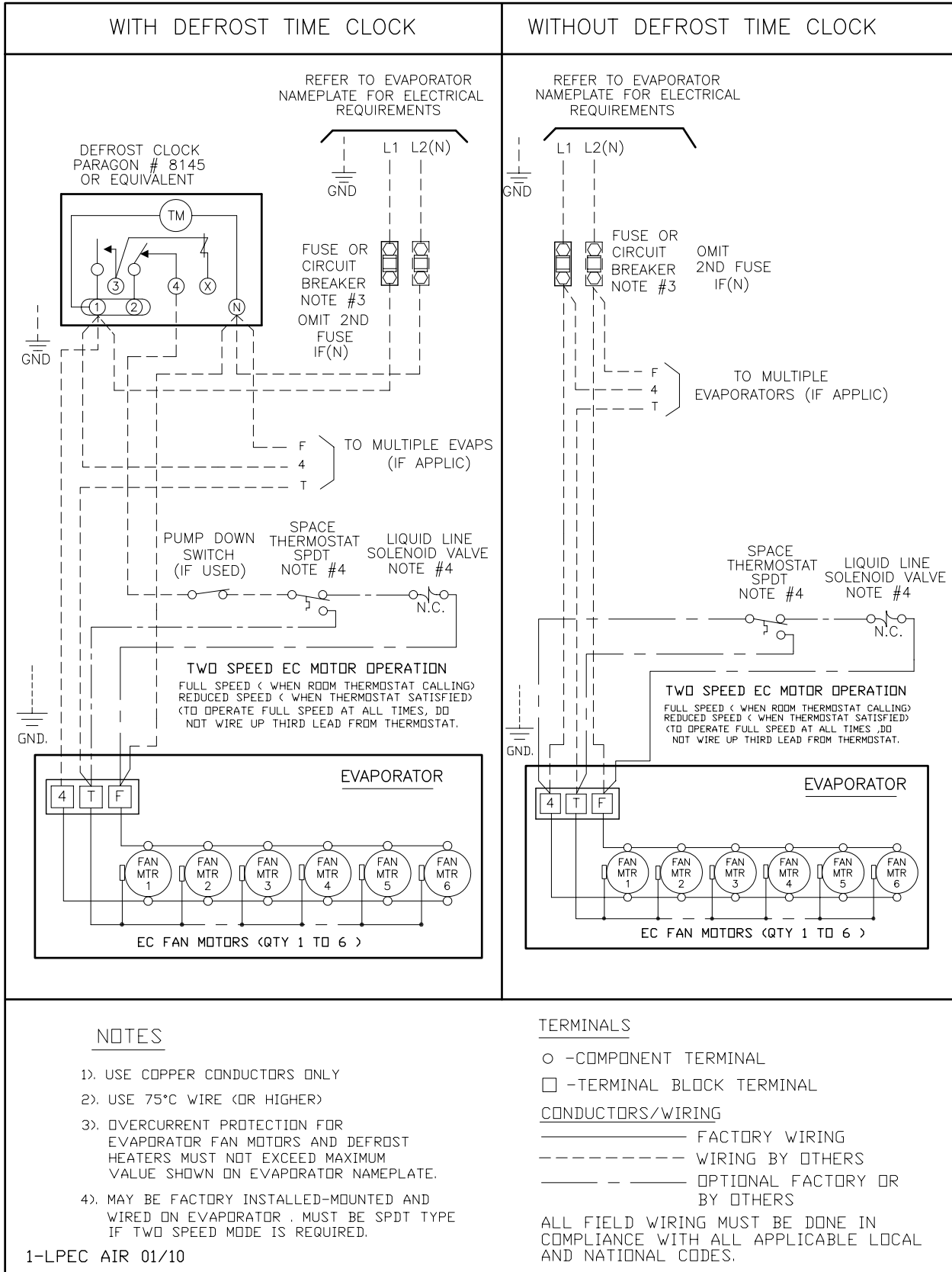
Note: Data collected on a typical freezer application with a 3HP low temp condensing unit and a 4 fan TPLP evaporator

INSTALLATION NOTES

EC motors are factory wired for SmartSpeed operation on evaporators equipped **with** a factory installed thermostat.

For SmartSpeed operation on Evaporators **without** a factory installed thermostat, a field wired SPDT type thermostat is required.

WIRING DIAGRAM - 115/1/60, 208-230/1/60 OPTIONAL EC MOTORS with SMARTSPEED™ AIR DEFROST MODELS



WIRING DIAGRAM - 208-230/1/60

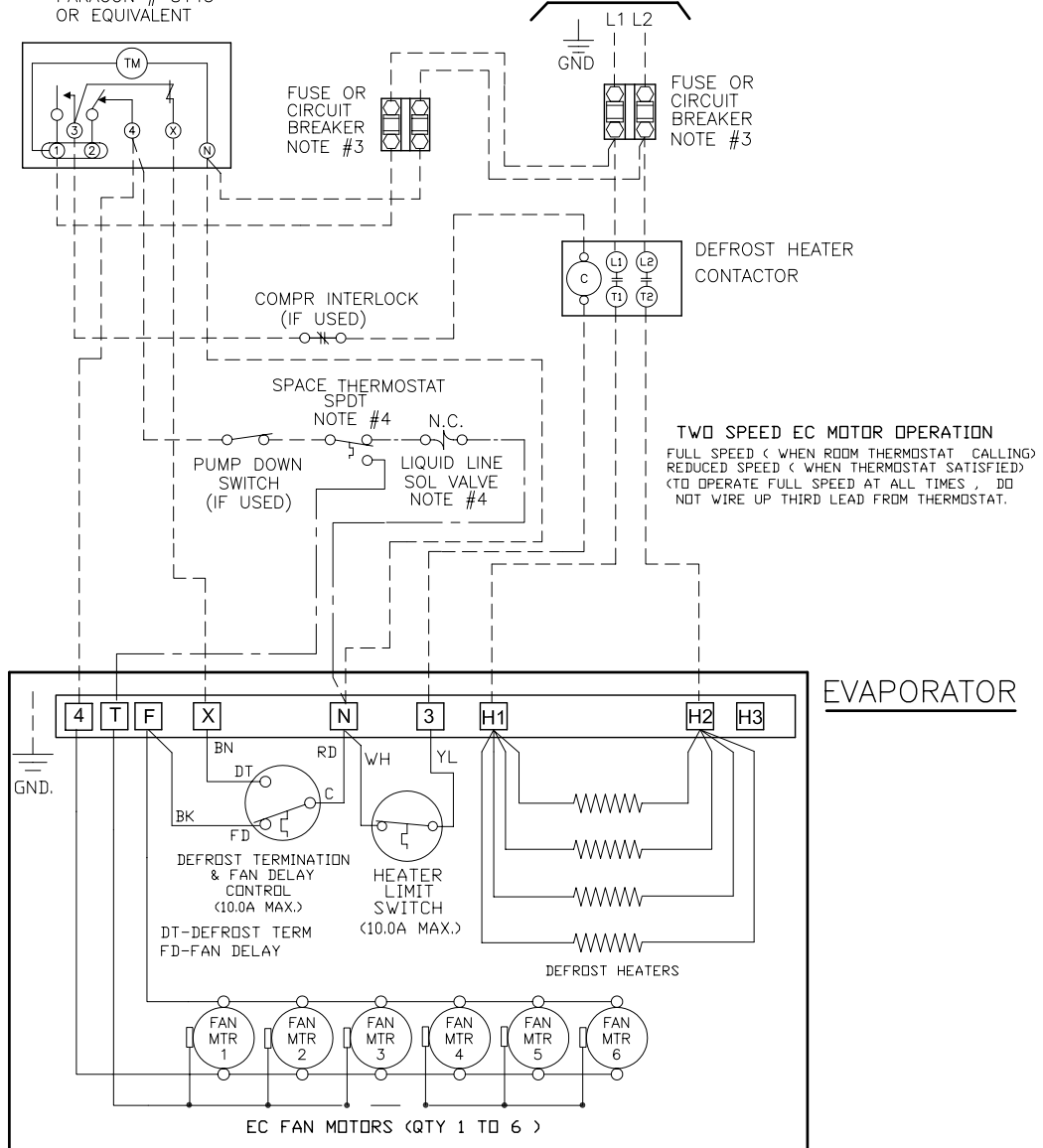
OPTIONAL EC MOTORS with SMARTSPEED™

ELECTRIC DEFROST MODELS

FOR ALL MODELS USING DEFROST HEATER CONTACTOR

DEFROST CLOCK
PARAGON # 8145
OR EQUIVALENT

REFER TO EVAPORATOR NAMEPLATE FOR ELECTRICAL REQUIREMENTS



TWO SPEED EC MOTOR OPERATION
FULL SPEED (WHEN ROOM THERMOSTAT CALLING)
REDUCED SPEED (WHEN THERMOSTAT SATISFIED)
(TO OPERATE FULL SPEED AT ALL TIMES , DO NOT WIRE UP THIRD LEAD FROM THERMOSTAT .

EVAPORATOR

NOTES

- 1). USE COPPER CONDUCTORS ONLY
- 2). USE 75°C WIRE (OR HIGHER)
- 3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS AND DEFROST HEATERS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.
- 4). MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR . MUST BE SPDT TYPE IF TWO SPEED MODE IS REQUIRED.

TERMINALS

- -COMPONENT TERMINAL
- -TERMINAL BLOCK TERMINAL

CONDUCTORS/WIRING

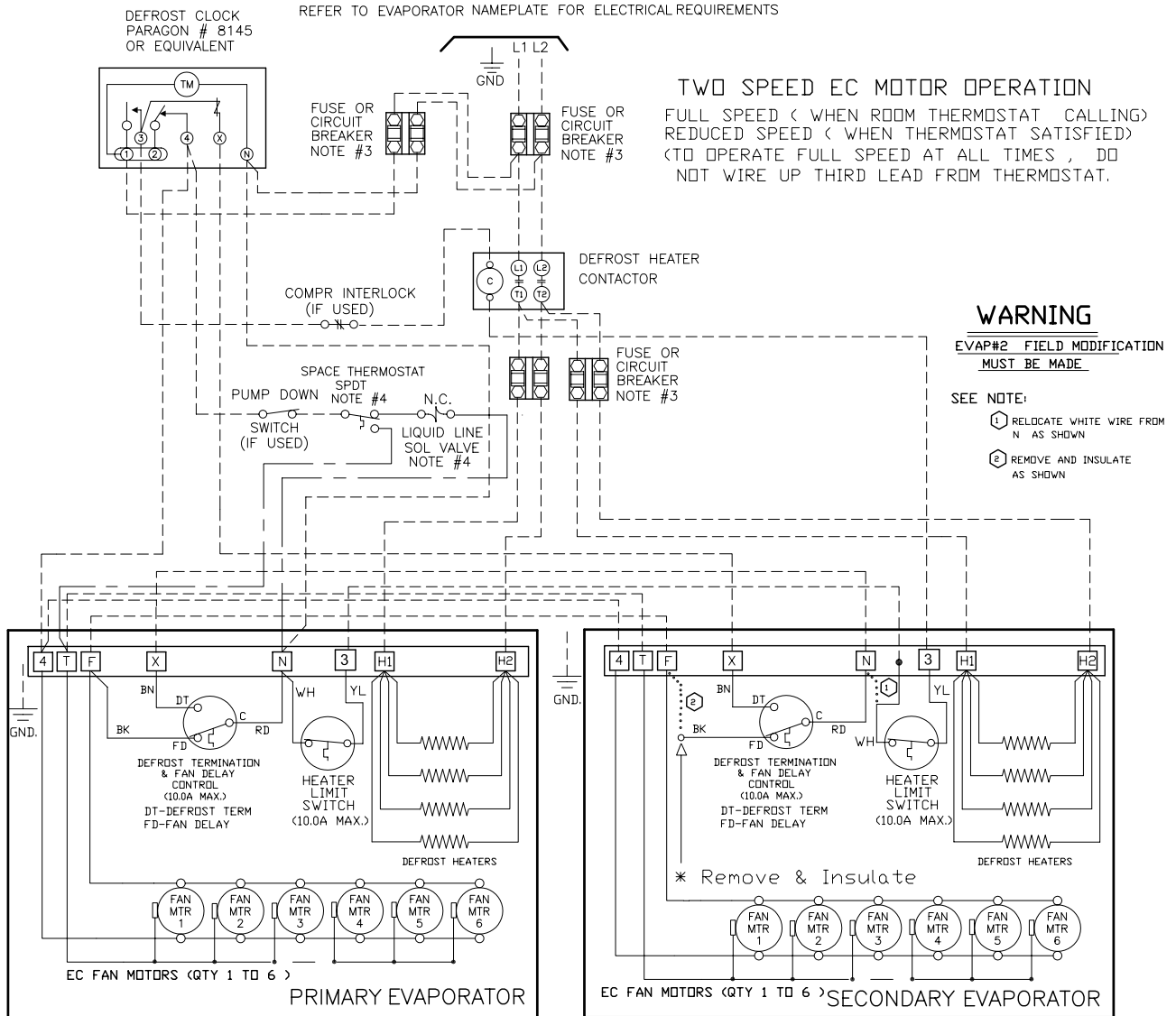
- FACTORY WIRING
- - - - - WIRING BY OTHERS
- OPTIONAL FACTORY OR BY OTHERS

ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

2-LPEC ED CONTACTOR SINGLE 01/10

ELECTRIC DEFROST MODELS - MULTIPLE EVAPORATORS

FOR ALL MODELS USING DEFROST HEATER CONTACTOR



* Fan delay not used on second evap / use fan contactor if total fan amps exceeds 10A

NOTES

- 1). USE COPPER CONDUCTORS ONLY
- 2). USE 75°C WIRE (OR HIGHER)
- 3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS AND DEFROST HEATERS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.
- 4). MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR . MUST BE SPDT TYPE IF TWO SPEED MODE IS REQUIRED.

3-LPEC ED CONTACTOR MULTI 01/10

TERMINALS

- -COMPONENT TERMINAL
- -TERMINAL BLOCK TERMINAL

CONDUCTORS/WIRING

- FACTORY WIRING
- WIRING BY OTHERS
- OPTIONAL FACTORY OR BY OTHERS

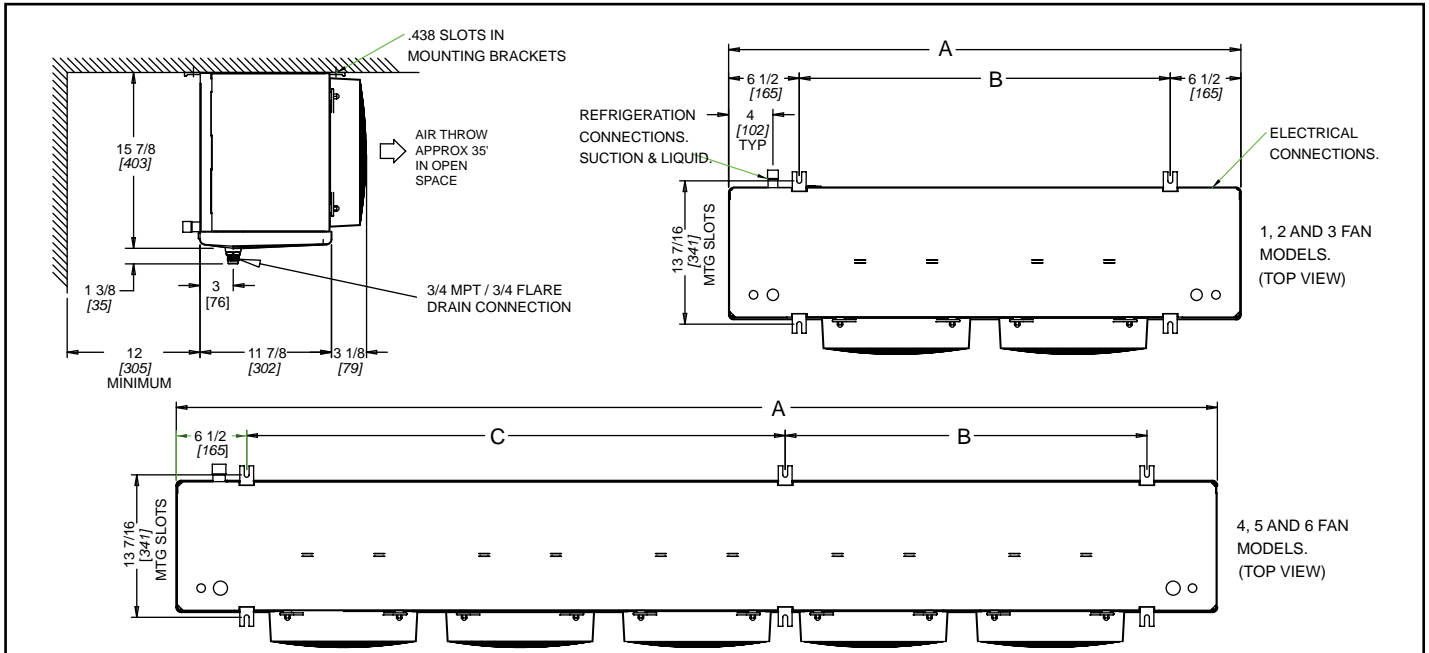
ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

Air Defrost Models

MODEL TPLP	SHIPPING WEIGHT	
	LB.	(kg)
104MA	45	(20)
106MA	47	(21)
107MA	49	(22)
209MA	70	(32)
211MA	74	(33)
214MA	78	(35)
317MA	101	(46)
320MA	107	(48)
423MA	117	(53)
426MA	135	(61)
532MA	163	(74)
639MA	192	(87)

Electric Defrost Models

MODEL TPLP			SHIPPING WEIGHT	
			LB.	(kg)
104ME	104LE	103VE	49	(22)
106ME	105LE	104VE	51	(23)
107ME	106LE	105VE	53	(24)
209ME	207LE	206VE	76	(34)
211ME	209LE	208VE	80	(36)
214ME	211LE	209VE	84	(38)
317ME	314LE	312VE	109	(49)
320ME	317LE	315VE	115	(52)
423ME	419LE	416VE	127	(58)
426ME	422LE	419VE	145	(66)
532ME	527LE	523VE	176	(80)
639ME	631LE	627VE	207	(94)



MODEL TPLP	NO. OF FANS	A		B		C		SUCTION CONNECTION (ID) SWEAT	LIQUID CONNECTION (ID) SWEAT		
		IN	(mm)	IN	(mm)	IN	(mm)		R407A	R22	R404A
104M^	1	30 1/4	(768)	17 1/4	(438)	N/A	N/A	5/8	3/8	3/8	
106M^	1	30 1/4	(768)	17 1/4	(438)	N/A	N/A	5/8	3/8	3/8	
107M^	1	30 1/4	(768)	17 1/4	(438)	N/A	N/A	5/8	3/8	3/8	
209M^	2	46 1/4	(1175)	33 1/4	(845)	N/A	N/A	7/8	3/8	3/8	
211M^	2	46 1/4	(1175)	33 1/4	(845)	N/A	N/A	7/8	3/8	3/8	
214M^	2	46 1/4	(1175)	33 1/4	(845)	N/A	N/A	7/8	3/8	3/8	
317M^	3	62 1/4	(1581)	49 1/4	(1251)	N/A	N/A	7/8	3/8	3/8	
320M^	3	62 1/4	(1581)	49 1/4	(1251)	N/A	N/A	7/8	3/8	3/8	
423M^	4	78 1/4	(1988)	32 5/8	(829)	32 5/8	(829)	1 1/8	3/8	3/8	
426M^	4	78 1/4	(1988)	32 5/8	(829)	32 5/8	(829)	1 1/8	3/8	1/2	
532M^	5	94 1/4	(2394)	32 5/8	(829)	48 5/8	(1235)	1 3/8	1/2	1/2	
639M^	6	110 1/4	(2800)	48 5/8	(1235)	48 5/8	(1235)	1 3/8	1/2	1/2	
104L^	1	30 1/4	(768)	17 1/4	(438)	N/A	N/A	5/8	3/8	3/8	
105L^	1	30 1/4	(768)	17 1/4	(438)	N/A	N/A	5/8	3/8	3/8	
106L^	1	30 1/4	(768)	17 1/4	(438)	N/A	N/A	5/8	3/8	3/8	
207L^	2	46 1/4	(1175)	33 1/4	(845)	N/A	N/A	7/8	3/8	3/8	
209L^	2	46 1/4	(1175)	33 1/4	(845)	N/A	N/A	7/8	3/8	3/8	
211L^	2	46 1/4	(1175)	33 1/4	(845)	N/A	N/A	7/8	3/8	3/8	
314L^	3	62 1/4	(1581)	49 1/4	(1251)	N/A	N/A	7/8	3/8	3/8	
317L^	3	62 1/4	(1581)	49 1/4	(1251)	N/A	N/A	1 1/8	3/8	3/8	
419L^	4	78 1/4	(1988)	32 5/8	(829)	32 5/8	(829)	1 1/8	3/8	3/8	
422L^	4	78 1/4	(1988)	32 5/8	(829)	32 5/8	(829)	1 1/8	3/8	3/8	
527L^	5	94 1/4	(2394)	32 5/8	(829)	48 5/8	(1235)	1 3/8	3/8	1/2	
631L^	6	110 1/4	(2800)	48 5/8	(1235)	48 5/8	(1235)	1 3/8	1/2	1/2	
103V^	1	30 1/4	(768)	17 1/4	(438)	N/A	N/A	5/8	3/8	3/8	
104V^	1	30 1/4	(768)	17 1/4	(438)	N/A	N/A	5/8	3/8	3/8	
105V^	1	30 1/4	(768)	17 1/4	(438)	N/A	N/A	5/8	3/8	3/8	
206V^	2	46 1/4	(1175)	33 1/4	(845)	N/A	N/A	7/8	3/8	3/8	
208V^	2	46 1/4	(1175)	33 1/4	(845)	N/A	N/A	7/8	3/8	3/8	
209V^	2	46 1/4	(1175)	33 1/4	(845)	N/A	N/A	7/8	3/8	3/8	
312V^	3	62 1/4	(1581)	49 1/4	(1251)	N/A	N/A	7/8	3/8	3/8	
315V^	3	62 1/4	(1581)	49 1/4	(1251)	N/A	N/A	1 1/8	3/8	3/8	
416V^	4	78 1/4	(1988)	32 5/8	(829)	32 5/8	(829)	1 1/8	3/8	3/8	
419V^	4	78 1/4	(1988)	32 5/8	(829)	32 5/8	(829)	1 1/8	3/8	3/8	
523V^	5	94 1/4	(2394)	32 5/8	(829)	48 5/8	(1235)	1 3/8	3/8	1/2	
627V^	6	110 1/4	(2800)	48 5/8	(1235)	48 5/8	(1235)	1 3/8	3/8	1/2	

^ = A or E. Refer to Nomenclature for details

SPORLAN

MODEL TPLP	FACTORY INSTALLED NOZZLE	R404A R507	R448A R407A R407C R22	R134a
104M	N/A	EBQE-AA*°C	EBQE-AAA-VC	EBQE-AAA-JC
106M	L-1/2	EBQE-AA*°C	EBQE-AA-VC	EBQE-AA-JC
107M	L-1/2	EBQE-A*°C	EBQE-AA-VC	EBQE-AA-JC
209M	L-3/4	EBQE-A*°C	EBQE-AA-VC	EBQE-AA-JC
211M	L-1	EBQE-A*°C	EBQE-A-VC	EBQE-A-JC
214M	L-1	EBQE-B*°C	EBQE-A-VC	EBQE-A-JC
317M	L-1 1/2	EBQE-B*°C	EBQE-A-VC	EBQE-A-JC
320M	L-1 1/2	EBQE-B*°C	EBQE-B-VC	EBQE-A-JC
423M	L-2	EBQE-B*°C	EBQE-B-VC	EBQE-A-JC
426M	L-2	EBQE-C*°C	EBQE-B-VC	EBQE-B-JC
532M	L-2 1/2	EBQE-C*°C	EBQE-B-VC	EBQE-B-JC
639M	G-3	EBQE-C*°C	EBQE-C-VC	EBQE-C-JC

ALCO

MODEL TPLP	FACTORY INSTALLED NOZZLE	R404A R507	R448A R407A R407C R22	R134a
104M	N/A	HFESC 1/4 SC	HFESC 1/2 HC	HFESC 1/2 MC
106M	L-1/2	HFESC 1/2 SC	HFESC 1/2 HC	HFESC 3/4 MC
107M	L-1/2	HFESC 1/2 SC	HFESC 1/2 HC	HFESC 3/4 MC
209M	L-3/4	HFESC 1 SC	HFESC 1 HC	HFESC 3/4 MC
211M	L-1	HFESC 1 SC	HFESC 1 HC	HFESC 1 MC
214M	L-1	HFESC 1-1/4 SC	HFESC 1-1/2 HC	HFESC 1 MC
317M	L-1 1/2	HFESC 1-1/2 SC	HFESC 1-1/2 HC	HFESC 1-1/2 MC
320M	L-1 1/2	HFESC 1-1/2 SC	HFESC 2 HC	HFESC 1-3/4 MC
423M	L-2	HFESC 2 SC	HFESC 2 HC	HFESC 1-3/4 MC
426M	L-2	HFESC 2 SC	HFESC 2-1/2 HC	HFESC 2-1/2 MC
532M	L-2 1/2	HFESC 3-1/2 SC	HFESC 2-1/2 HC	HFESC 2-1/2 MC
639M	G-3	HFESC 3-1/2 SC	HFESC 3 HC	HFESC 4 MC

* Varies with refrigerant: S = R404A, P = R507
For R449A, use R448A data.

For R449A, use R448A data.

DANFOSS

MODEL TPLP	FACTORY INSTALLED NOZZLE	R404A R507	R448A R407A R407C † R22	R134a
104M	N/A	TUAE-R404A-4-N	TUAE-R22-4-N	TUAE-R134a-4-N
106M	L-1/2	TUAE-R404A-5-N	TUAE-R22-5-N	TUAE-R134a-5-N
107M	L-1/2	TUAE-R404A-6-N	TUAE-R22-5-N	TUAE-R134a-5-N
209M	L-3/4	TUAE-R404A-7-N	TUAE-R22-6-N	TUAE-R134a-6-N
211M	L-1	TUAE-R404A-7-N	TUAE-R22-6-N	TUAE-R134a-6-N
214M	L-1	TUAE-R404A-8-N	TUAE-R22-7-N	TUAE-R134a-7-N
317M	L-1 1/2	TUAE-R404A-8-N	TUAE-R22-8-N	TUAE-R134a-8-N
320M	L-1 1/2	TUAE-R404A-9-N	TUAE-R22-8-N	TUAE-R134a-8-N
423M	L-2	TUAE-R404A-9-N	TUAE-R22-8-N	TUAE-R134a-9-N
426M	L-2	TCAE-R404A-TC1-N	TUAE-R22-9-N	TUAE-R134a-9-N
532M	L-2 1/2	TCAE-R404A-TC2-N	TUAE-R22-9-N	TCAE-R134a-TC1-N
639M	G-3	TCAE-R404A-TC3-N	TCAE-R22-TC1-N	TCAE-R134a-TC2-N

† If using 407C, superheat setting must be adjusted by turning 1 - 1.5 turns clockwise.
For R449A, use R448A data.

Above selections based on:

- 1) 100°F (38°C) vapor free liquid entering expansion valve
- 2) 110°F (43°C) Condensing temperature
- 3) 8 -12°F (4.4 -6.7°C) evaporator TD

If correct nozzle is not available, the proper orifice size can be drilled in the field using the following chart

NOZZLE ORIFICE No.	DRILL SIZE IN.
1/2	.070
3/4	.086
1	.0995
1-1/2	.120
2	.1406
2-1/2	.157
3	.172
4	.199
5	.211
6	.242
8	.266
10	.281

SPORLAN - R407A R448A

MODEL TPLP	FACTORY INSTALLED NOZZLE	0° F (-18° C) EVAP.	-10° F (-23° C) EVAP.	-20° F (-29° C) EVAP.	-30° F (-34° C) EVAP.	-40° F (-40° C) EVAP.
104L	L-1/2	EBQE-AAA-VC	EBQE-AA-VZP40	EBQE-AA-VZP40	EBQE-AA-VZP40	EBQE-AA-VZP40
105L	L-3/4	EBQE-AA-VC	EBQE-AA-VZP40	EBQE-AA-VZP40	EBQE-AA-VZP40	EBQE-AA-VZP40
106L	L-1	EBQE-AA-VC	EBQE-AA-VZP40	EBQE-AA-VZP40	EBQE-AA-VZP40	EBQE-AA-VZP40
207L	L-1	EBQE-AA-VC	EBQE-AA-VZP40	EBQE-A-VZP40	EBQE-A-VZP40	EBQE-A-VZP40
209L	L-1-1/2	EBQE-AA-VC	EBQE-A-VZP40	EBQE-A-VZP40	EBQE-A-VZP40	EBQE-A-VZP40
211L	L-2	EBQE-A-VC	EBQE-A-VZP40	EBQE-A-VZP40	EBQE-A-VZP40	EBQE-B-VZP40
314L	L-2	EBQE-A-VC	EBQE-A-VZP40	EBQE-B-VZP40	EBQE-B-VZP40	EBQE-B-VZP40
317L	L-3	EBQE-A-VC	EBQE-B-VZP40	EBQE-B-VZP40	EBQE-B-VZP40	EBQE-B-VZP40
419L	L-3	EBQE-A-VC	EBQE-B-VZP40	EBQE-B-VZP40	EBQE-B-VZP40	EBQE-B-VZP40
422L	G-4	EBQE-B-VC	EBQE-B-VZP40	EBQE-B-VZP40	EBQE-C-VZP40	EBQE-C-VZP40
527L	G-4	EBQE-B-VC	EBQE-C-VZP40	EBQE-C-VZP40	EBQE-C-VZP40	EBQE-C-VZP40
631L	G-5	EBQE-C-VC	EBQE-C-VZP40	EBQE-C-VZP40	EBQE-C-VZP40	EBQE-C-VZP40
103V	L-1/2	EBQE-AAA-VC	EBQE-AAA-VZP40	EBQE-AA-VZP40	EBQE-AA-VZP40	EBQE-AA-VZP40
104V	L-3/4	EBQE-AAA-VC	EBQE-AA-VZP40	EBQE-AA-VZP40	EBQE-AA-VZP40	EBQE-AA-VZP40
105V	L-1	EBQE-AA-VC	EBQE-AA-VZP40	EBQE-AA-VZP40	EBQE-AA-VZP40	EBQE-AA-VZP40
206V	L-1	EBQE-AA-VC	EBQE-AA-VZP40	EBQE-AA-VZP40	EBQE-AA-VZP40	EBQE-A-VZP40
208V	L-1 1/2	EBQE-AA-VC	EBQE-AA-VZP40	EBQE-A-VZP40	EBQE-A-VZP40	EBQE-A-VZP40
209V	L-2	EBQE-A-VC	EBQE-A-VZP40	EBQE-A-VZP40	EBQE-A-VZP40	EBQE-A-VZP40
312V	L-2	EBQE-A-VC	EBQE-A-VZP40	EBQE-A-VZP40	EBQE-B-VZP40	EBQE-B-VZP40
315V	L-2 1/2	EBQE-A-VC	EBQE-B-VZP40	EBQE-B-VZP40	EBQE-B-VZP40	EBQE-B-VZP40
416V	L-2 1/2	EBQE-A-VC	EBQE-B-VZP40	EBQE-B-VZP40	EBQE-B-VZP40	EBQE-B-VZP40
419V	G-3	EBQE-A-VC	EBQE-B-VZP40	EBQE-B-VZP40	EBQE-B-VZP40	EBQE-B-VZP40
523V	G-4	EBQE-B-VC	EBQE-B-VZP40	EBQE-C-VZP40	EBQE-C-VZP40	EBQE-C-VZP40
627V	G-5	EBQE-B-VC	EBQE-C-VZP40	EBQE-C-VZP40	EBQE-C-VZP40	EBQE-C-VZP40

For R449A, use R448A data.

SPORLAN - R404A

MODEL TPLP	FACTORY INSTALLED NOZZLE	0° F (-18° C) EVAP.	-10° F (-23° C) EVAP.	-20° F (-29° C) EVAP.	-30° F (-34° C) EVAP.	-40° F (-40° C) EVAP.
104L	L-1/2	EBQE-AA-SC	EBQE-AA-SZP	EBQE-AA-SZP	EBQE-AA-SZP	EBQE-AA-SZP
105L	L-3/4	EBQE-AA-SC	EBQE-AA-SZP	EBQE-AA-SZP	EBQE-AA-SZP	EBQE-AA-SZP
106L	L-1	EBQE-AA-SC	EBQE-A-SZP	EBQE-A-SZP	EBQE-A-SZP	EBQE-A-SZP
207L	L-1	EBQE-A-SC	EBQE-A-SZP	EBQE-A-SZP	EBQE-A-SZP	EBQE-A-SZP
209L	1-1/2	EBQE-A-SC	EBQE-A-SZP	EBQE-A-SZP	EBQE-A-SZP	EBQE-A-SZP
211L	L-2	EBQE-A-SC	EBQE-A-SZP	EBQE-A-SZP	EBQE-A-SZP	EBQE-A-SZP
314L	L-2	EBQE-B-SC	EBQE-B-SZP	EBQE-B-SZP	EBQE-B-SZP	EBQE-B-SZP
317L	L-3	EBQE-B-SC	EBQE-B-SZP	EBQE-B-SZP	EBQE-B-SZP	EBQE-B-SZP
419L	L-3	EBQE-B-SC	EBQE-B-SZP	EBQE-C-SZP	EBQE-C-SZP	EBQE-C-SZP
422L	G-4	EBQE-C-SC	EBQE-C-SZP	EBQE-C-SZP	EBQE-C-SZP	EBQE-C-SZP
527L	G-4	EBQE-C-SC	EBQE-C-SZP	EBQE-C-SZP	EBSE-6-SZP	EBSE-6-SZP
631L	G-5	EBSE-6-SC	EBSE-6-SZP	EBSE-6-SZP	EBSE-6-SZP	EBSE-6-SZP
103V	L-1/2	EBQE-AA-SC	EBQE-AA-SZP	EBQE-AA-SZP	EBQE-AA-SZP	EBQE-AA-SZP
104V	L-3/4	EBQE-AA-SC	EBQE-AA-SZP	EBQE-AA-SZP	EBQE-AA-SZP	EBQE-AA-SZP
105V	L-1	EBQE-AA-SC	EBQE-AA-SZP	EBQE-AA-SZP	EBQE-AA-SZP	EBQE-AA-SZP
206V	L-1	EBQE-A-SC	EBQE-A-SZP	EBQE-A-SZP	EBQE-A-SZP	EBQE-A-SZP
208V	L-1 1/2	EBQE-A-SC	EBQE-A-SZP	EBQE-A-SZP	EBQE-A-SZP	EBQE-A-SZP
209V	L-2	EBQE-A-SC	EBQE-A-SZP	EBQE-A-SZP	EBQE-A-SZP	EBQE-A-SZP
312V	L-2	EBQE-A-SC	EBQE-A-SZP	EBQE-A-SZP	EBQE-B-SZP	EBQE-B-SZP
315V	L-2 1/2	EBQE-B-SC	EBQE-B-SZP	EBQE-B-SZP	EBQE-B-SZP	EBQE-B-SZP
416V	L-2 1/2	EBQE-B-SC	EBQE-B-SZP	EBQE-B-SZP	EBQE-B-SZP	EBQE-B-SZP
419V	G-3	EBQE-B-SC	EBQE-B-SZP	EBQE-C-SZP	EBQE-C-SZP	EBQE-C-SZP
523V	G-4	EBQE-C-SC	EBQE-C-SZP	EBQE-C-SZP	EBQE-C-SZP	EBQE-C-SZP
627V	G-5	EBQE-C-SC	EBQE-C-SZP	EBQE-C-SZP	EBSE-6-SZP	EBSE-6-SZP

Above selections based on:

- 1) 100°F (38°C) vapor free liquid entering expansion valve
- 2) 110°F (43°C) Condensing temperature
- 3) 8 -12°F (4.4 -6.7°C) evaporator TD

INSTALLATION

The installation and start-up of evaporators should only be performed by qualified refrigeration mechanics. This equipment should be installed in accordance with all applicable codes, ordinances and local by-laws.

INSPECTION

Inspect all equipment before unpacking for visible signs of damage or loss. Check shipping list against material received to ensure shipment is complete.

IMPORTANT: Remember, you, the consignee, must make any claim necessary against the transportation company. Shipping damage or missing parts, when discovered at the outset, will prevent later unnecessary and costly delays.

If damage or loss during transport is evident, make claim to carrier, as this will be their responsibility, not the manufacturer's.

Should carton be damaged, but damage to equipment is not obvious, a claim should be filed for "concealed damage" with the carrier.

IMPORTANT: The electrical characteristics of the unit should be checked at this time to make sure they correspond to those ordered and to electrical power available at the job site.

Save all shipping papers, tags and instruction sheets for reference by installer and owner.

APPLICATION

TPLP evaporators are designed for walker-in cooler and freezer applications used with a wide range of refrigerants. For room temperatures above 35°F (2°C) AND evaporating temperatures above 26°F (-3°C), positive defrosting means (electric) may not be required, otherwise, electric defrost defrost models should be used. Electric defrost models come with defrost termination and fan delay as standard to control the defrost cycle termination and fan delay, while defrost initiation means (e.g. defrost timer) is not included.

The coil must not be exposed to any abnormal atmospheric or acidic environments. This may result in corrosion to the cabinet and possible coil failure (leaks). (Consult manufacturer for optional baked on phenolic protective coatings).

LOCATION

The unit location in the room should be selected to ensure uniform air distribution throughout the entire space to be refrigerated. Be sure that the product does not obstruct the free circulation of air. Allow a minimum of 24" clearance at each end. Do not locate evaporators over doors. Consideration should be given to the coil location in order to minimize the piping run length to the condensing unit and floor drain.

EXPANSION VALVE (TXV) PRE-SELECTED

Locate the expansion valve bulb on a horizontal length of suction line preferably 3 to 6 inches from the suction header. Locate the bulb at 4 or 8 clock position and insulate with a waterproof type of insulation. Clamp the bulb to ensure 100% contact of the bulb with the suction line.

After following the manufacturer's installation instructions and after the room has reached the desired temperature the valve superheat should be checked. This will confirm that the evaporator is operating properly and performing to maximum efficiency. The superheat should be around 6 (3.3°C) to 8°F (4.4°C) for a 10 to 12°F T.D (5.6 to 6.7°C). Too high or low a super heat will result in unsatisfactory system performance and possible compressor problems.

MOUNTING

Refer to dimensional drawing for recommended mounting arrangements. Ensure adequate clearance is provided behind the coil as well as each end. The evaporators may be mounted flush with ceiling with bolts, or hanging down with rod hangers. When using rod hangers, allow adequate space between the top of the unit and the ceiling for cleaning to comply with NSF Standard 7.

Ensure that the ceiling is level since the drain pan has been sloped for drainage during the defrost cycle.

DRAIN LINE

The drain line should be run from the drain connection, sloping at least 1" (25 mm) per foot and should have the size at least as large as the drain connection. A P-Trap in a warm area outside the room must be provided to allow proper draining through the tubing. Connection should be made to proper drainage facilities that comply with local regulations.

To prevent freeze-up when the temperature of the refrigerated space is 35°F (2°C) or lower, the drain line should be heated along its run inside the cold room. The heated drain line should be insulated. It is recommended that the heater be energized at all times. A heat input of 20 watts per foot in a 28°F (-2°C) room and 30 watts per foot for -20°F (-29°C) rooms, is satisfactory. Drain line heaters are not required for constant room temperature above 35°F (2°C).

Always trap evaporator drain line individually to prevent vapor migration.

Ensure that the drain line has sufficient slope for proper drainage (prevention of ice build up/blockage in pan).

PIPING

Refrigeration grade piping must be used for all field refrigeration piping. Refrigerant line sizes are important and **may not** be the same size as the coil connections. Consult ASHRAE handbook or other similar reference book for proper line sizing.

Refrigerant piping and control system should be designed to prevent possible liquid slugging (from oil or refrigerant) of the compressors on start-up after the defrost cycle. Also, it should prevent oil logging and minimize refrigerant pressure drop.

WIRING

Wire system in accordance with governing standards and local codes. See data and wiring diagrams on pages 4 to 20 for typical wiring arrangement. Electrical wiring is to be sized in accordance with minimum circuit ampacity rating (MCA). Size fuses used must not exceed the Maximum Fuse Size ratings.

For ease of identifying the proper wiring terminal, unit wiring is color coded and terminal block connections are identified.

When **fan delay thermostats** (combination fan delay and defrost termination) are installed, on start-up, the fans do not operate until the coil temperature is reduced to approximately 25°F (-4°C). It is normal for the fans to cycle a few times until the room temperature is brought down. At higher evaporating temperatures this control may not close and therefore should either be by-passed temporarily or replaced with an adjustable type. (set for a higher temperature cut-in point).

MAINTENANCE

The unit should be periodically inspected for any dirt or ice build-up on the fin surface and cleaned if necessary with a soft whisk or brush. Also ensure coils inner (and outer) drain pans do not have any ice build-up from improper defrost operation. When replacing heater elements first remove heater retainer brackets and heater clips.

SYSTEM CHECK

Before Start-Up:

1. All wiring should be in accordance with local codes.
2. Refrigerant lines should be properly sized.
3. Thorough evacuation and dehydration has been performed.
4. The suction, discharge, and receiver service valves must be open.
5. The system preferably include a liquid line filter drier moisture indicator and suction filter.
6. Pour enough water into the drain pan to allow a good check on drainage and seal the trap.

After Start-Up:

1. Check the oil level to be sure the oil charge is correct.
2. On initial start up the fans do not start until coil temperature is pulled down to approximately 25°F (-4°C) on the coil. Also, it is normal for the fan to cycle a few times until the room temperature is pulled down.
3. If necessary, temporarily by-pass fan delay control (to run fans until room temp is lowered).
4. Be sure that the expansion valve is properly set to provide the correct amount of superheat.
5. After the box temperature is close to reaching the desired temperature, the evaporator superheat must be checked and adjustment made if necessary. In general, evaporators running with a TD of 10°F (5.6°C) should have a superheat reading of 6° to 8°F (3.3°C to 4.4°C). For evaporators with another T.D., the general rule is that the superheat should be around 60 to 80% of T.D.
6. Heavy moisture loads are usually encountered when starting the system for the first time. This may cause a rapid build-up of frost on the evaporator. During the initial pull down, we suggest that the frost build-up be watched and defrosted manually as required.
7. Observe that the system goes through at least one complete DEFROST CYCLE.


System	
Model Number	Date of Start-Up
Serial Number	Service Contractor
Refrigerant	Phone
Electrical Supply	E-Mail


 <p>PRODUCT SUPPORT</p>	<p><i>web:</i> t-rp.com/tplp <i>email:</i> evaps@t-rp.com <i>call:</i> 1-844-893-3222 x520</p>
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 <p>TROUBLESHOOTING</p>	<p><i>email:</i> troubleshooting@t-rp.com <i>call:</i> 1-844-893-3222 x529</p>
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 <p>SERVICE PARTS</p>	<p><i>web:</i> t-rp.com/serv_parts.htm <i>email:</i> parts@t-rp.com <i>call:</i> 1-844-893-3222 x520</p>
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 <p>WARRANTY</p>	<p><i>web:</i> t-rp.com/warranty <i>email:</i> warranty@t-rp.com <i>call:</i> 1-844-893-3222 ext. 501</p>
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 <p>ORDERS</p>	<p><i>email:</i> orders@t-rp.com <i>call:</i> 1-844-893-3222 x501</p>
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 <p>SHIPPING</p>	<p><i>email:</i> shipping@t-rp.com <i>call:</i> 1-844-893-3222 x503</p>
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“AS BUILT” SERVICE PARTS LIST

Service Parts List
Label
To Be Attached
HERE



Trenton Refrigeration
Brantford, ON • Longview, TX
1-800-463-9517 info@t-rp.com www.t-rp.com

