



# KLP Low Profile Unit Cooler

**60**  
Hz

## PRODUCT DATA & INSTALLATION

Bulletin K30-KLP-PDI-1

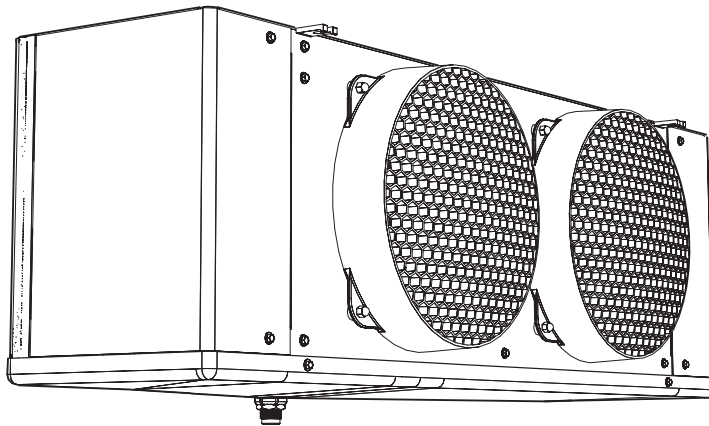
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**new**

Air, Electric, Hot Gas  
& Warm Fluid Defrost

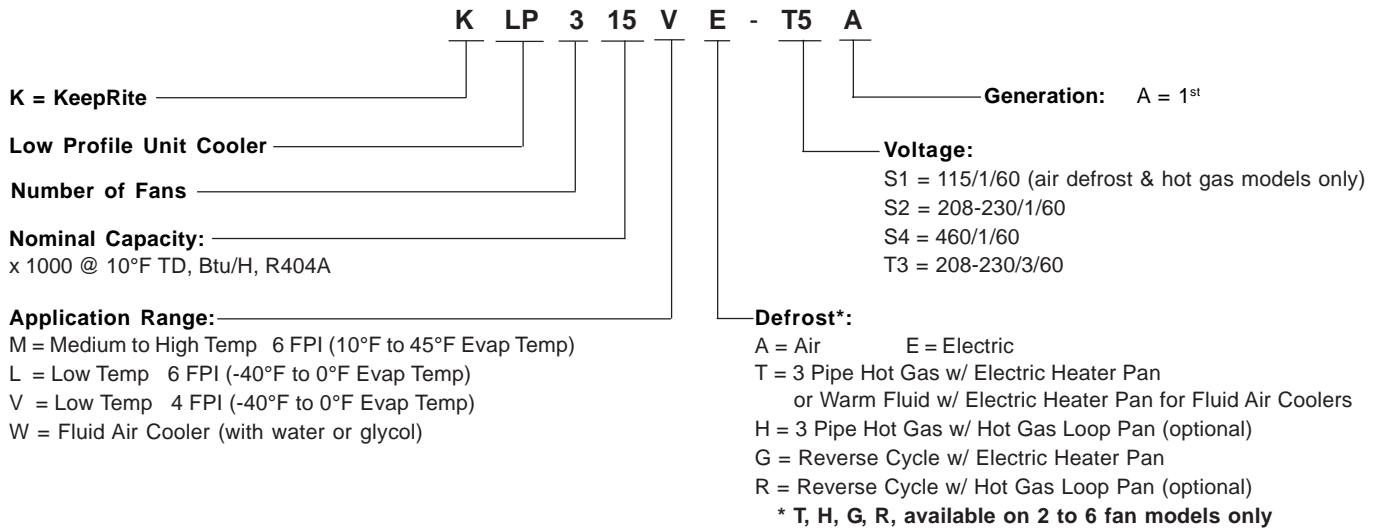
Electrical Power:  
115/1/60, 208-230/1/60,  
208-230/3/60, 460/1/60



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# NOMENCLATURE



## STANDARD FEATURES

- Modern look
- High efficiency and high strength fan guard
- Front access
- Higher capacity
- Compact
- Internally enhanced tubing
- More uniform air flow
- Reverse cycle & 3 pipe hot gas available
- Convenient mounting brackets
- Ample electrical and header compartments
- Lower heater wattage
- Proven motor/fan/motor mount design
- 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 distributor nozzle
- 460/1/60 PSC motor only

## OPTIONAL FEATURES

- PSC motors
- Hot gas loop pan with hot gas defrost models
- Factory installed expansion valve, solenoid valve and room thermostat
- Wire fan guard

# CAPACITY DATA ALL MODELS

# 60Hz

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

Medium Temp. Models			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. °F (°C)	25 (-4)	4300 (1260)	5500 (1610)	6800 (1990)	8600 (2520)	11000 (3220)	14000 (4100)	17000 (4980)	20000 (5860)	23000 (6740)	26000 (7610)	32000 (9370)	39000 (11400)
		Air Flow	CFM (L/S)		1010 (470)	950 (450)	900 (430)	2020 (950)	1910 (900)	1800 (850)	2860 (1350)	2700 (1270)	3810 (1800)	3600 (1700)
Refrigerant Charge (R404A)		LB. (KG)	0.7 (0.3)	1.0 (0.5)	1.3 (0.6)	1.3 (0.6)	1.9 (0.9)	2.5 (1.1)	2.8 (1.3)	3.7 (1.7)	3.7 (1.7)	4.9 (2.2)	6.1 (2.7)	7.2 (3.3)

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

Low Temp. Models			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. °F (°C)	0 (-18)	3930 (1150)	5200 (1520)	6090 (1780)	7930 (2320)	9720 (2850)	11500 (3370)	15100 (4420)	18100 (5300)	20000 (5860)	23000 (6740)	29000 (8490)	34400 (10100)
		-10 (-23)	3870 (1130)	5020 (1470)	5960 (1750)	7690 (2250)	9400 (2750)	11300 (3310)	14600 (4280)	17600 (5160)	19600 (5740)	22500 (6590)	28100 (8230)	32900 (9640)
		-20 (-29)	3800 (1110)	4800 (1410)	5800 (1700)	7400 (2170)	9000 (2640)	11000 (3220)	14000 (4100)	17000 (4980)	19000 (5570)	22000 (6440)	27000 (7910)	31000 (9080)
		-30 (-34)	3550 (1040)	4410 (1290)	5380 (1580)	6820 (2000)	8280 (2430)	10200 (2990)	12900 (3780)	15700 (4600)	17600 (5160)	20400 (5980)	24900 (7290)	28400 (8320)
		-40 (-40)	3270 (960)	3980 (1170)	4920 (1440)	6180 (1810)	7470 (2190)	9340 (2740)	11700 (3430)	14300 (4190)	16100 (4720)	18800 (5510)	22500 (6590)	25300 (7410)
		Air Flow	CFM (L/S)		1010 (480)	950 (450)	900 (430)	2020 (950)	1910 (900)	1800 (850)	2860 (1350)	2700 (1270)	3810 (1800)	3600 (1700)
Refrigerant Charge (R404A)		LB. (KG)	0.7 (0.3)	1.0 (0.5)	1.3 (0.6)	1.3 (0.6)	1.7 (0.8)	2.5 (1.1)	2.8 (1.3)	3.7 (1.7)	3.7 (1.7)	4.9 (2.2)	6.1 (2.7)	7.2 (3.3)

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

Low Temp. 4 FPI Models			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. °F (°C)	0 (-18)	3070 (900)	4340 (1270)	5170 (1510)	6720 (1970)	8240 (2410)	9610 (2820)	12600 (3690)	15700 (4600)	16600 (4860)	19600 (5740)	24200 (7090)	29100 (8520)
		-10 (-23)	3040 (890)	4230 (1240)	5100 (1490)	6570 (1920)	8040 (2360)	9480 (2780)	12300 (3600)	15400 (4510)	16300 (4770)	19300 (5650)	23600 (6910)	28100 (8230)
		-20 (-29)	3000 (880)	4100 (1200)	5000 (1470)	6400 (1880)	7800 (2290)	9300 (2720)	12000 (3520)	15000 (4390)	16000 (4690)	19000 (5570)	23000 (6740)	27000 (7910)
		-30 (-34)	2820 (830)	3790 (1110)	4660 (1370)	5930 (1740)	7220 (2120)	8680 (2540)	11100 (3250)	13900 (4070)	14900 (4360)	17800 (5210)	21300 (6240)	24900 (7290)
		-40 (-40)	2620 (770)	3460 (1010)	4310 (1260)	5430 (1590)	6590 (1930)	8020 (2350)	10200 (2990)	12800 (3750)	13700 (4010)	16400 (4800)	19500 (5710)	22500 (6590)
		Air Flow	CFM (L/S)		1070 (510)	1010 (480)	950 (450)	2140 (1010)	2020 (950)	1910 (900)	3030 (1430)	2860 (1350)	4040 (1910)	3810 (1800)
Refrigerant Charge (R404A)		LB. (KG)	0.7 (0.3)	1.0 (0.5)	1.3 (0.6)	1.3 (0.6)	1.7 (0.8)	2.5 (1.1)	2.8 (1.3)	3.7 (1.7)	3.7 (1.7)	4.9 (2.2)	6.1 (2.7)	7.2 (3.3)

Capacities rated using R404A with 10°F (5.6°C) TD & 100°F (38°C) liquid temperature.

Capacities at other TD within a range of 8 to 12 °F (4.4 to 6.7°C) are directly proportional to TD, or use formula:

$$\text{Capacity} = \text{Rated capacity} \div 10 \times \text{TD}$$

For capacities at TD outside of range 8 to 12 °F (4.4 to 6.7°C), or liquid temperature lower than 75°F (24°), consult factory.

# ELECTRICAL DATA - 115/1/60

# 60Hz

## AIR DEFROST &

## HOT GAS DEFROST WITH HOT GAS LOOP PAN MODELS

MODEL	FPI	FAN MOTORS									
		QUANTITY	SHADED POLE MOTORS				PSC MOTORS				
			HP	FLA TOTAL	MIN. CIRC. AMPACITY (A)	MAX. FUSE (AMPS)	HP	FLA TOTAL	MIN. CIRC. AMPACITY (A)	MAX. FUSE (AMPS)	
104MA-S1A *	6	1	1/20	2.1	2.6	15	1/15	1.0	1.3	15	
106MA-S1A *		1	1/20	2.1	2.6	15	1/15	1.0	1.3	15	
107MA-S1A *		1	1/20	2.1	2.6	15	1/15	1.0	1.3	15	
209M#-S1A		2	1/20	4.2	4.7	15	1/15	2.0	2.3	15	
211M#-S1A		2	1/20	4.2	4.7	15	1/15	2.0	2.3	15	
214M#-S1A		2	1/20	4.2	4.7	15	1/15	2.0	2.3	15	
317M#-S1A		3	1/20	6.3	6.8	15	1/15	3.0	3.3	15	
320M#-S1A		3	1/20	6.3	6.8	15	1/15	3.0	3.3	15	
423M#-S1A		4	1/20	8.4	8.9	15	1/15	4.0	4.3	15	
426M#-S1A		4	1/20	8.4	8.9	15	1/15	4.0	4.3	15	
532M#-S1A		5	1/20	10.5	11.0	15	1/15	5.0	5.3	15	
639M#-S1A		6	1/20	12.6	15.1	20	1/15	6.0	6.3	15	
104LA-S1A *		6	1	1/20	2.1	2.6	15	1/15	1.0	1.3	15
105LA-S1A *			1	1/20	2.1	2.6	15	1/15	1.0	1.3	15
106LA-S1A *	1		1/20	2.1	2.6	15	1/15	1.0	1.3	15	
207L#-S1A	2		1/20	4.2	4.7	15	1/15	2.0	2.3	15	
209L#-S1A	2		1/20	4.2	4.7	15	1/15	2.0	2.3	15	
211L#-S1A	2		1/20	4.2	4.7	15	1/15	2.0	2.3	15	
314L#-S1A	3		1/20	6.3	6.8	15	1/15	3.0	3.3	15	
317L#-S1A	3		1/20	6.3	6.8	15	1/15	3.0	3.3	15	
419L#-S1A	4		1/20	8.4	8.9	15	1/15	4.0	4.3	15	
422L#-S1A	4		1/20	8.4	8.9	15	1/15	4.0	4.3	15	
527L#-S1A	5		1/20	10.5	11.0	15	1/15	5.0	5.3	15	
631L#-S1A	6		1/20	12.6	15.1	20	1/15	6.0	6.3	15	
103VA-S1A *	4		1	1/20	2.1	2.6	15	1/15	1.0	1.3	15
104VA-S1A *			1	1/20	2.1	2.6	15	1/15	1.0	1.3	15
105VA-S1A *		1	1/20	2.1	2.6	15	1/15	1.0	1.3	15	
206V#-S1A		2	1/20	4.2	4.7	15	1/15	2.0	2.3	15	
208V#-S1A		2	1/20	4.2	4.7	15	1/15	2.0	2.3	15	
209V#-S1A		2	1/20	4.2	4.7	15	1/15	2.0	2.3	15	
312V#-S1A		3	1/20	6.3	6.8	15	1/15	3.0	3.3	15	
315V#-S1A		3	1/20	6.3	6.8	15	1/15	3.0	3.3	15	
416V#-S1A		4	1/20	8.4	8.9	15	1/15	4.0	4.3	15	
419V#-S1A		4	1/20	8.4	8.9	15	1/15	4.0	4.3	15	
523V#-S1A		5	1/20	10.5	11.0	15	1/15	5.0	5.3	15	
627V#-S1A		6	1/20	12.6	15.1	20	1/15	6.0	6.3	15	

# = A, H or R. Refer to Nomenclature for details

\* = H and R available on 2 to 6 fan models only.

# ELECTRICAL DATA - 208-230/1/60

# 60Hz

## AIR DEFROST & HOT GAS DEFROST WITH HOT GAS LOOP PAN MODELS

MODEL	FPI	FAN MOTORS									
		QUANTITY	SHADED POLE MOTORS				PSC MOTORS				
			HP	FLA TOTAL	MIN. CIRC. AMPACITY (A)	MAX. FUSE (AMPS)	HP	FLA TOTAL	MIN. CIRC. AMPACITY (A)	MAX. FUSE (AMPS)	
104MA-S2A *	6	1	1/20	1.1	1.4	15	1/15	0.5	0.6	15	
106MA-S2A *		1	1/20	1.1	1.4	15	1/15	0.5	0.6	15	
107MA-S2A *		1	1/20	1.1	1.4	15	1/15	0.5	0.6	15	
209M#-S2A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	
211M#-S2A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	
214M#-S2A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	
317M#-S2A		3	1/20	3.3	3.6	15	1/15	1.5	1.6	15	
320M#-S2A		3	1/20	3.3	3.6	15	1/15	1.5	1.6	15	
423M#-S2A		4	1/20	4.4	4.7	15	1/15	2.0	2.1	15	
426M#-S2A		4	1/20	4.4	4.7	15	1/15	2.0	2.1	15	
532M#-S2A		5	1/20	5.5	5.8	15	1/15	2.5	2.6	15	
639M#-S2A		6	1/20	6.6	6.9	15	1/15	3.0	3.1	15	
104LA-S2A *		6	1	1/20	1.1	1.4	15	1/15	0.5	0.6	15
105LA-S2A *			1	1/20	1.1	1.4	15	1/15	0.5	0.6	15
106LS-S2A *	1		1/20	1.1	1.4	15	1/15	0.5	0.6	15	
207L#-S2A	2		1/20	2.2	2.5	15	1/15	1.0	1.1	15	
209L#-S2A	2		1/20	2.2	2.5	15	1/15	1.0	1.1	15	
211L#-S2A	2		1/20	2.2	2.5	15	1/15	1.0	1.1	15	
314L#-S2A	3		1/20	3.3	3.6	15	1/15	1.5	1.6	15	
317L#-S2A	3		1/20	3.3	3.6	15	1/15	1.5	1.6	15	
419L#-S2A	4		1/20	4.4	4.7	15	1/15	2.0	2.1	15	
422L#-S2A	4		1/20	4.4	4.7	15	1/15	2.0	2.1	15	
527L#-S2A	5		1/20	5.5	5.8	15	1/15	2.5	2.6	15	
631L#-S2A	6		1/20	6.6	6.9	15	1/15	3.0	3.1	15	
103VA-S2A *	4		1	1/20	1.1	1.4	15	1/15	0.5	0.6	15
104VA-S2A *			1	1/20	1.1	1.4	15	1/15	0.5	0.6	15
105VA-S2A *		1	1/20	1.1	1.4	15	1/15	0.5	0.6	15	
206V#-S2A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	
208V#-S2A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	
209V#-S2A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	
312V#-S2A		3	1/20	3.3	3.6	15	1/15	1.5	1.6	15	
315V#-S2A		3	1/20	3.3	3.6	15	1/15	1.5	1.6	15	
416V#-S2A		4	1/20	4.4	4.7	15	1/15	2.0	2.1	15	
419V#-S2A		4	1/20	4.4	4.7	15	1/15	2.0	2.1	15	
523V#-S2A		5	1/20	5.5	5.8	15	1/15	2.5	2.6	15	
627V#-S2A		6	1/20	6.6	6.9	15	1/15	3.0	3.1	15	

# = A, H or R. Refer to Nomenclature for details

\* = H and R available on 2 to 6 fan models only.

# ELECTRICAL DATA - 460/1/60

# 60Hz

## AIR DEFROST &

## HOT GAS DEFROST WITH HOT GAS LOOP PAN MODELS

MODEL	FPI	FAN MOTORS									
		QUANTITY	SHADED POLE MOTORS				PSC MOTORS				
			HP	FLA TOTAL	MIN. CIRC. AMPACITY (A)	MAX. FUSE (AMPS)	HP	FLA TOTAL	MIN. CIRC. AMPACITY (A)	MAX. FUSE (AMPS)	
104MA-S4A *	6	1	N/A	N/A	N/A	N/A	1/15	0.4	0.5	15	
106MA-S4A *		1	N/A	N/A	N/A	N/A	1/15	0.4	0.5	15	
107MA-S4A *		1	N/A	N/A	N/A	N/A	1/15	0.4	0.5	15	
209M#-S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	
211M#-S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	
214M#-S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	
317M#-S4A		3	N/A	N/A	N/A	N/A	1/15	1.2	1.3	15	
320M#-S4A		3	N/A	N/A	N/A	N/A	1/15	1.2	1.3	15	
423M#-S4A		4	N/A	N/A	N/A	N/A	1/15	1.6	1.7	15	
426M#-S4A		4	N/A	N/A	N/A	N/A	1/15	1.6	1.7	15	
532M#-S4A		5	N/A	N/A	N/A	N/A	1/15	2.0	2.1	15	
639M#-S4A		6	N/A	N/A	N/A	N/A	1/15	2.4	2.5	15	
104LA-S4A *		6	1	N/A	N/A	N/A	N/A	1/15	0.4	0.5	15
105LA-S4A *			1	N/A	N/A	N/A	N/A	1/15	0.4	0.5	15
106LA-S4A *	1		N/A	N/A	N/A	N/A	1/15	0.4	0.5	15	
207L#-S4A	2		N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	
209L#-S4A	2		N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	
211L#-S4A	2		N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	
314L#-S4A	3		N/A	N/A	N/A	N/A	1/15	1.2	1.3	15	
317L#-S4A	3		N/A	N/A	N/A	N/A	1/15	1.2	1.3	15	
419L#-S4A	4		N/A	N/A	N/A	N/A	1/15	1.6	1.7	15	
422L#-S4A	4		N/A	N/A	N/A	N/A	1/15	1.6	1.7	15	
527L#-S4A	5		N/A	N/A	N/A	N/A	1/15	2.0	2.1	15	
631L#-S4A	6		N/A	N/A	N/A	N/A	1/15	2.4	2.5	15	
103VA-S4A *	4		1	N/A	N/A	N/A	N/A	1/15	0.4	0.5	15
104VA-S4A *			1	N/A	N/A	N/A	N/A	1/15	0.4	0.5	15
105VS-S4A *		1	N/A	N/A	N/A	N/A	1/15	0.4	0.5	15	
206V#-S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	
208V#-S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	
209V#-S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	
312V#-S4A		3	N/A	N/A	N/A	N/A	1/15	1.2	1.3	15	
315V#-S4A		3	N/A	N/A	N/A	N/A	1/15	1.2	1.3	15	
416V#-S4A		4	N/A	N/A	N/A	N/A	1/15	1.6	1.7	15	
419V#-S4A		4	N/A	N/A	N/A	N/A	1/15	1.6	1.7	15	
523V#-S4A		5	N/A	N/A	N/A	N/A	1/15	2.0	2.1	15	
627V#-S4A		6	N/A	N/A	N/A	N/A	1/15	2.4	2.5	15	

# = A, H or R. Refer to Nomenclature for details

\* = H and R available on 2 to 6 fan models only.

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

60Hz

MODEL	FPI	FAN MOTORS									DEFROST HEATERS						
		QTY.	SHADED POLE MOTORS				PSC MOTORS				TOTAL WATTS	208-230/1/60			208-230/3/60		
			HP	FLA TOTAL	MCA (A)	MAX. FUSE (AMPS)	HP	FLA TOTAL	MCA (A)	MAX. FUSE (AMPS)		TOTAL AMPS	MCA (A)	MAX. FUSE (AMPS)	TOTAL AMPS	MCA (A)	MAX. FUSE (AMPS)
104ME-*A	6	1	1/20	1.1	1.4	15	1/15	0.5	0.6	15	1060	4.6	5.8	15	3.0	3.8	15
106ME-*A		1	1/20	1.1	1.4	15	1/15	0.5	0.6	15	1060	4.6	5.8	15	3.0	3.8	15
107ME-*A		1	1/20	1.1	1.4	15	1/15	0.5	0.6	15	1060	4.6	5.8	15	3.0	3.8	15
209ME-*A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	1890	8.2	10.3	15	5.3	6.7	15
211ME-*A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	1890	8.2	10.3	15	5.3	6.7	15
214ME-*A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	1890	8.2	10.3	15	5.3	6.7	15
317ME-*A		3	1/20	3.3	3.6	15	1/15	1.5	1.6	15	2730	11.9	14.8	15	7.7	10	15
320ME-*A		3	1/20	3.3	3.6	15	1/15	1.5	1.6	15	2730	11.9	14.8	15	7.7	10	15
423ME-*A		4	1/20	4.4	4.7	15	1/15	2.0	2.1	15	3560	15.5	19.3	20	10	12	15
426ME-*A		4	1/20	4.4	4.7	15	1/15	2.0	2.1	15	3560	15.5	19.3	20	10	12	15
532ME-*A		5	1/20	5.5	5.8	15	1/15	2.5	2.6	15	4400	19.1	23.9	25	12	15.1	20
639ME-*A		6	1/20	6.6	6.9	15	1/15	3.0	3.1	15	5230	22.7	28.4	30	15	18	20
104LE-*A	6	1	1/20	1.1	1.4	15	1/15	0.5	0.6	15	1060	4.6	5.8	15	3.0	3.8	15
105LE-*A		1	1/20	1.1	1.4	15	1/15	0.5	0.6	15	1060	4.6	5.8	15	3.0	3.8	15
106LE-*A		1	1/20	1.1	1.4	15	1/15	0.5	0.6	15	1060	4.6	5.8	15	3.0	3.8	15
207LE-*A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	1890	8.2	10.3	15	5.3	6.7	15
209LE-*A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	1890	8.2	10.3	15	5.3	6.7	15
211LE-*A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	1890	8.2	10.3	15	5.3	6.7	15
314LE-*A		3	1/20	3.3	3.6	15	1/15	1.5	1.6	15	2730	11.9	14.8	15	7.7	10	15
317LE-*A		3	1/20	3.3	3.6	15	1/15	1.5	1.6	15	2730	11.9	14.8	15	7.7	10	15
419LE-*A		4	1/20	4.4	4.7	15	1/15	2.0	2.1	15	3560	15.5	19.3	20	10	12	15
422LE-*A		4	1/20	4.4	4.7	15	1/15	2.0	2.1	15	3560	15.5	19.3	20	10	12	15
527LE-*A		5	1/20	5.5	5.8	15	1/15	2.5	2.6	15	4400	19.1	23.9	25	12	15.1	20
631LE-*A		6	1/20	6.6	6.9	15	1/15	3.0	3.1	15	5230	22.7	28.4	30	15	18	20
103VE-*A	4	1	1/20	1.1	1.4	15	1/15	0.5	0.6	15	1060	4.6	5.8	15	3.0	3.8	15
104VE-*A		1	1/20	1.1	1.4	15	1/15	0.5	0.6	15	1060	4.6	5.8	15	3.0	3.8	15
105VE-*A		1	1/20	1.1	1.4	15	1/15	0.5	0.6	15	1060	4.6	5.8	15	3.0	3.8	15
206VE-*A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	1890	8.2	10.3	15	5.3	6.7	15
208VE-*A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	1890	8.2	10.3	15	5.3	6.7	15
209VE-*A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	1890	8.2	10.3	15	5.3	6.7	15
312VE-*A		3	1/20	3.3	3.6	15	1/15	1.5	1.6	15	2730	11.9	14.8	15	7.7	10	15
315VE-*A		3	1/20	3.3	3.6	15	1/15	1.5	1.6	15	2730	11.9	14.8	15	7.7	10	15
416VE-*A		4	1/20	4.4	4.7	15	1/15	2.0	2.1	15	3560	15.5	19.3	20	10	12	15
419VE-*A		4	1/20	4.4	4.7	15	1/15	2.0	2.1	15	3560	15.5	19.3	20	10	12	15
523VE-*A		5	1/20	5.5	5.8	15	1/15	2.5	2.6	15	4400	19.1	23.9	25	12	15.1	20
627VE-*A		6	1/20	6.6	6.9	15	1/15	3.0	3.1	15	5230	22.7	28.4	30	15	18	20

\* = S2 or T3. Refer to Nomenclature for details

# ELECTRICAL DATA - 460/1/60

## ELECTRIC DEFROST MODELS

# 60Hz

MODEL	FPI	FAN MOTORS									DEFROST HEATERS			
		QTY.	SHADED POLE MOTORS				PSC MOTORS				TOTAL WATTS	TOTAL AMPS	MCA (A)	MAX. FUSE (AMPS)
			HP	FLA TOTAL	MCA (A)	MAX. FUSE (AMPS)	HP	FLA TOTAL	MCA (A)	MAX. FUSE (AMPS)				
104ME-S4A	6	1	N/A	N/A	N/A	N/A	1/15	0.4	0.5	15	1060	2.3	2.9	15
106ME-S4A		1	N/A	N/A	N/A	N/A	1/15	0.4	0.5	15	1060	2.3	2.9	15
107ME-S4A		1	N/A	N/A	N/A	N/A	1/15	0.4	0.5	15	1060	2.3	2.9	15
209ME-S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	1890	4.1	5.1	15
211ME-S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	1890	4.1	5.1	15
214ME-S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	1890	4.1	5.1	15
317ME-S4A		3	N/A	N/A	N/A	N/A	1/15	1.2	1.3	15	2730	5.9	7.4	15
320ME-S4A		3	N/A	N/A	N/A	N/A	1/15	1.2	1.3	15	2730	5.9	7.4	15
423ME-S4A		4	N/A	N/A	N/A	N/A	1/15	1.6	1.7	15	3560	7.7	9.7	15
426ME-S4A		4	N/A	N/A	N/A	N/A	1/15	1.6	1.7	15	3560	7.7	9.7	15
532ME-S4A		5	N/A	N/A	N/A	N/A	1/15	2.0	2.1	15	4400	9.6	12.0	15
639ME-S4A		6	N/A	N/A	N/A	N/A	1/15	2.4	2.5	15	5230	11.4	14.2	15
104LE-S4A	6	1	N/A	N/A	N/A	N/A	1/15	0.4	0.5	15	1060	2.3	2.9	15
105LE-S4A		1	N/A	N/A	N/A	N/A	1/15	0.4	0.5	15	1060	2.3	2.9	15
106LE-S4A		1	N/A	N/A	N/A	N/A	1/15	0.4	0.5	15	1060	2.3	2.9	15
207LE-S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	1890	4.1	5.1	15
209LE-S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	1890	4.1	5.1	15
211LE-S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	1890	4.1	5.1	15
314LE-S4A		3	N/A	N/A	N/A	N/A	1/15	1.2	1.3	15	2730	5.9	7.4	15
317LE-S4A		3	N/A	N/A	N/A	N/A	1/15	1.2	1.3	15	2730	5.9	7.4	15
419LE-S4A		4	N/A	N/A	N/A	N/A	1/15	1.6	1.7	15	3560	7.7	9.7	15
422LE-S4A		4	N/A	N/A	N/A	N/A	1/15	1.6	1.7	15	3560	7.7	9.7	15
527LE-S4A		5	N/A	N/A	N/A	N/A	1/15	2.0	2.1	15	4400	9.6	12.0	15
631LE-S4A		6	N/A	N/A	N/A	N/A	1/15	2.4	2.5	15	5230	11.4	14.2	15
103VE-S4A	4	1	N/A	N/A	N/A	N/A	1/15	0.4	0.5	15	1060	2.3	2.9	15
104VE-S4A		1	N/A	N/A	N/A	N/A	1/15	0.4	0.5	15	1060	2.3	2.9	15
105VE-S4A		1	N/A	N/A	N/A	N/A	1/15	0.4	0.5	15	1060	2.3	2.9	15
206VE-S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	1890	4.1	5.1	15
208VE-S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	1890	4.1	5.1	15
209VE-S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	1890	4.1	5.1	15
312VE-S4A		3	N/A	N/A	N/A	N/A	1/15	1.2	1.3	15	2730	5.9	7.4	15
315VE-S4A		3	N/A	N/A	N/A	N/A	1/15	1.2	1.3	15	2730	5.9	7.4	15
416VE-S4A		4	N/A	N/A	N/A	N/A	1/15	1.6	1.7	15	3560	7.7	9.7	15
419VE-S4A		4	N/A	N/A	N/A	N/A	1/15	1.6	1.7	15	3560	7.7	9.7	15
523VE-S4A	5	N/A	N/A	N/A	N/A	1/15	2.0	2.1	15	4400	9.6	12.0	15	
627VE-S4A	6	N/A	N/A	N/A	N/A	1/15	2.4	2.5	15	5230	11.4	14.2	15	



**ELECTRICAL DATA - 115/1/60**  
**HOT GAS DEFROST**  
**WITH DRAIN PAN HEATER MODELS**

60Hz

MODEL	FPI	FAN MOTORS									DRAIN PAIN HEATERS			
		QTY.	SHADED POLE MOTORS				PSC MOTORS				TOTAL WATTS	TOTAL AMPS	MCA (A)	MAX. FUSE (AMPS)
			HP	FLA TOTAL	MCA (A)	MAX. FUSE (AMPS)	HP	FLA TOTAL	MCA (A)	MAX. FUSE (AMPS)				
209M#-S1A	6	2	1/20	4.2	4.7	15	1/15	2.0	2.3	15	410	3.6	4.5	15
211M#-S1A		2	1/20	4.2	4.7	15	1/15	2.0	2.3	15	410	3.6	4.5	15
214M#-S1A		2	1/20	4.2	4.7	15	1/15	2.0	2.3	15	410	3.6	4.5	15
317M#-S1A		3	1/20	6.3	6.8	15	1/15	3.0	3.3	15	560	4.9	6.1	15
320M#-S1A		3	1/20	6.3	6.8	15	1/15	3.0	3.3	15	560	4.9	6.1	15
423M#-S1A		4	1/20	8.4	8.9	15	1/15	4.0	4.3	15	720	6.3	7.8	15
426M#-S1A		4	1/20	8.4	8.9	15	1/15	4.0	4.3	15	720	6.3	7.8	15
532M#-S1A		5	1/20	10.5	11.0	15	1/15	5.0	5.3	15	880	7.7	9.6	15
639M#-S1A		6	1/20	12.6	15.1	20	1/15	6.0	6.3	15	1030	9.0	11.2	15
207L#-S1A	6	2	1/20	4.2	4.7	15	1/15	2.0	2.3	15	410	3.6	4.5	15
209L#-S1A		2	1/20	4.2	4.7	15	1/15	2.0	2.3	15	410	3.6	4.5	15
211L#-S1A		2	1/20	4.2	4.7	15	1/15	2.0	2.3	15	410	3.6	4.5	15
314L#-S1A		3	1/20	6.3	6.8	15	1/15	3.0	3.3	15	560	4.9	6.1	15
317L#-S1A		3	1/20	6.3	6.8	15	1/15	3.0	3.3	15	560	4.9	6.1	15
419L#-S1A		4	1/20	8.4	8.9	15	1/15	4.0	4.3	15	720	6.3	7.8	15
422L#-S1A		4	1/20	8.4	8.9	15	1/15	4.0	4.3	15	720	6.3	7.8	15
527L#-S1A		5	1/20	10.5	11.0	15	1/15	5.0	5.3	15	880	7.7	9.6	15
631L#-S1A		6	1/20	12.6	15.1	20	1/15	6.0	6.3	15	1030	9.0	11.2	15
206V#-S1A	4	2	1/20	4.2	4.7	15	1/15	2.0	2.3	15	410	3.6	4.5	15
208V#-S1A		2	1/20	4.2	4.7	15	1/15	2.0	2.3	15	410	3.6	4.5	15
209V#-S1A		2	1/20	4.2	4.7	15	1/15	2.0	2.3	15	410	3.6	4.5	15
312V#-S1A		3	1/20	6.3	6.8	15	1/15	3.0	3.3	15	560	4.9	6.1	15
315V#-S1A		3	1/20	6.3	6.8	15	1/15	3.0	3.3	15	560	4.9	6.1	15
416V#-S1A		4	1/20	8.4	8.9	15	1/15	4.0	4.3	15	720	6.3	7.8	15
419V#-S1A		4	1/20	8.4	8.9	15	1/15	4.0	4.3	15	720	6.3	7.8	15
523V#-S1A		5	1/20	10.5	11.0	15	1/15	5.0	5.3	15	880	7.7	9.6	15
627V#-S1A		6	1/20	12.6	15.1	20	1/15	6.0	6.3	15	1030	9.0	11.2	15

# = T or G. Refer to Nomenclature for details

**ELECTRICAL DATA - 208-230/1/60**  
**HOT GAS DEFROST**  
**WITH DRAIN PAN HEATER MODELS**

60Hz

MODEL	FPI	FAN MOTORS								DRAIN PAN HEATERS				
		QTY.	SHADED POLE MOTORS				PSC MOTORS				TOTAL WATTS	TOTAL AMPS	MCA (A)	MAX. FUSE (AMPS)
			HP	FLA TOTAL	MCA (A)	MAX. FUSE (AMPS)	HP	FLA TOTAL	MCA (A)	MAX. FUSE (AMPS)				
209M <sup>^</sup> -S2A	6	2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	410	1.8	2.2	15
211M <sup>^</sup> -S2A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	410	1.8	2.2	15
214M <sup>^</sup> -S2A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	410	1.8	2.2	15
317M <sup>^</sup> -S2A		3	1/20	3.3	3.6	15	1/15	1.5	1.6	15	560	2.4	3.0	15
320M <sup>^</sup> -S2A		3	1/20	3.3	3.6	15	1/15	1.5	1.6	15	560	2.4	3.0	15
423M <sup>^</sup> -S2A		4	1/20	4.4	4.7	15	1/15	2.0	2.1	15	720	3.1	3.9	15
426M <sup>^</sup> -S2A		4	1/20	4.4	4.7	15	1/15	2.0	2.1	15	720	3.1	3.9	15
532M <sup>^</sup> -S2A		5	1/20	5.5	5.8	15	1/15	2.5	2.6	15	880	3.8	4.8	15
639M <sup>^</sup> -S2A		6	1/20	6.6	6.9	15	1/15	3.0	3.1	15	1030	4.0	5.0	15
207L <sup>^</sup> -S2A	6	2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	410	1.8	2.2	15
209L <sup>^</sup> -S2A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	410	1.8	2.2	15
211L <sup>^</sup> -S2A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	410	1.8	2.2	15
314L <sup>^</sup> -S2A		3	1/20	3.3	3.6	15	1/15	1.5	1.6	15	560	2.4	3.0	15
317L <sup>^</sup> -S2A		3	1/20	3.3	3.6	15	1/15	1.5	1.6	15	560	2.4	3.0	15
419L <sup>^</sup> -S2A		4	1/20	4.4	4.7	15	1/15	2.0	2.1	15	720	3.1	3.9	15
422L <sup>^</sup> -S2A		4	1/20	4.4	4.7	15	1/15	2.0	2.1	15	720	3.1	3.9	15
527L <sup>^</sup> -S2A		5	1/20	5.5	5.8	15	1/15	2.5	2.6	15	880	3.8	4.8	15
631L <sup>^</sup> -S2A		6	1/20	6.6	6.9	15	1/15	3.0	3.1	15	1030	4.0	5.0	15
206V <sup>^</sup> -S2A	4	2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	410	1.8	2.2	15
208V <sup>^</sup> -S2A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	410	1.8	2.2	15
209V <sup>^</sup> -S2A		2	1/20	2.2	2.5	15	1/15	1.0	1.1	15	410	1.8	2.2	15
312V <sup>^</sup> -S2A		3	1/20	3.3	3.6	15	1/15	1.5	1.6	15	560	2.4	3.0	15
315V <sup>^</sup> -S2A		3	1/20	3.3	3.6	15	1/15	1.5	1.6	15	560	2.4	3.0	15
416V <sup>^</sup> -S2A		4	1/20	4.4	4.7	15	1/15	2.0	2.1	15	720	3.1	3.9	15
419V <sup>^</sup> -S2A		4	1/20	4.4	4.7	15	1/15	2.0	2.1	15	720	3.1	3.9	15
523V <sup>^</sup> -S2A		5	1/20	5.5	5.8	15	1/15	2.5	2.6	15	880	3.8	4.8	15
627V <sup>^</sup> -S2A		6	1/20	6.6	6.9	15	1/15	3.0	3.1	15	1030	4.0	5.0	15

<sup>^</sup> = T or G. Refer to Nomenclature for details

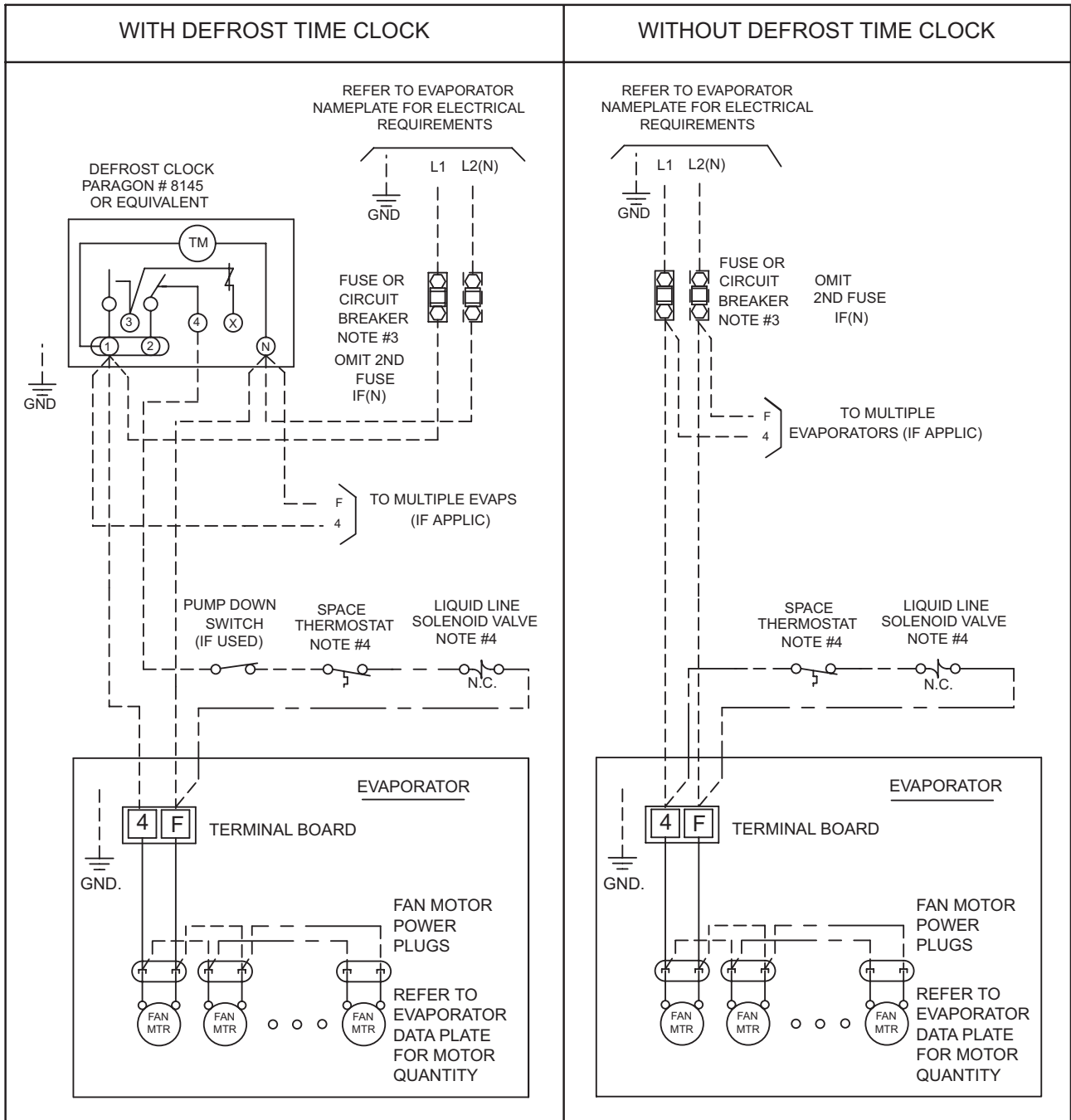
**ELECTRICAL DATA - 460/1/60**  
**HOT GAS DEFROST**  
**WITH DRAIN PAN HEATER MODELS**

60Hz

MODEL	FPI	FAN MOTORS									DRAIN PAN HEATERS			
		QTY.	SHADED POLE MOTORS				PSC MOTORS				TOTAL WATTS	TOTAL AMPS	MCA (A)	MAX. FUSE (AMPS)
			HP	FLA TOTAL	MCA (A)	MAX. FUSE (AMPS)	HP	FLA TOTAL	MCA (A)	MAX. FUSE (AMPS)				
209M^S4A	6	2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	410	0.9	1.1	15
211M^S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	410	0.9	1.1	15
214M^S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	410	0.9	1.1	15
317M^S4A		3	N/A	N/A	N/A	N/A	1/15	1.2	1.3	15	560	1.2	1.5	15
320M^S4A		3	N/A	N/A	N/A	N/A	1/15	1.2	1.3	15	560	1.2	1.5	15
423M^S4A		4	N/A	N/A	N/A	N/A	1/15	1.6	1.7	15	720	1.6	2.0	15
426M^S4A		4	N/A	N/A	N/A	N/A	1/15	1.6	1.7	15	720	1.6	2.0	15
532M^S4A		5	N/A	N/A	N/A	N/A	1/15	2.0	2.1	15	880	1.9	2.4	15
639M^S4A		6	N/A	N/A	N/A	N/A	1/15	2.4	2.5	15	1030	2.2	2.8	15
207L^S4A	6	2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	410	0.9	1.1	15
209L^S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	410	0.9	1.1	15
211L^S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	410	0.9	1.1	15
314L^S4A		3	N/A	N/A	N/A	N/A	1/15	1.2	1.3	15	560	1.2	1.5	15
317L^S4A		3	N/A	N/A	N/A	N/A	1/15	1.2	1.3	15	560	1.2	1.5	15
419L^S4A		4	N/A	N/A	N/A	N/A	1/15	1.6	1.7	15	720	1.6	2.0	15
422L^S4A		4	N/A	N/A	N/A	N/A	1/15	1.6	1.7	15	720	1.6	2.0	15
527L^S4A		5	N/A	N/A	N/A	N/A	1/15	2.0	2.1	15	880	1.9	2.4	15
631L^S4A		6	N/A	N/A	N/A	N/A	1/15	2.4	2.5	15	1030	2.2	2.8	15
206V^S4A	4	2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	410	0.9	1.1	15
208V^S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	410	0.9	1.1	15
209V^S4A		2	N/A	N/A	N/A	N/A	1/15	0.8	0.9	15	410	0.9	1.1	15
312V^S4A		3	N/A	N/A	N/A	N/A	1/15	1.2	1.3	15	560	1.2	1.5	15
315V^S4A		3	N/A	N/A	N/A	N/A	1/15	1.2	1.3	15	560	1.2	1.5	15
416V^S4A		4	N/A	N/A	N/A	N/A	1/15	1.6	1.7	15	720	1.6	2.0	15
419V^S4A		4	N/A	N/A	N/A	N/A	1/15	1.6	1.7	15	720	1.6	2.0	15
523V^S4A		5	N/A	N/A	N/A	N/A	1/15	2.0	2.1	15	880	1.9	2.4	15
627V^S4A		6	N/A	N/A	N/A	N/A	1/15	2.4	2.5	15	1030	2.2	2.8	15

^ = T or G. Refer to Nomenclature for details

# WIRING DIAGRAM - 115/1/60, 208-230/1/60 AIR DEFROST MODELS



### NOTES

- 1). USE COPPER CONDUCTORS ONLY
- 2). USE 90°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 10/05

### TERMINALS

- -COMPONENT TERMINAL
- -TERMINAL BLOCK TERMINAL

### CONDUCTORS/WIRING

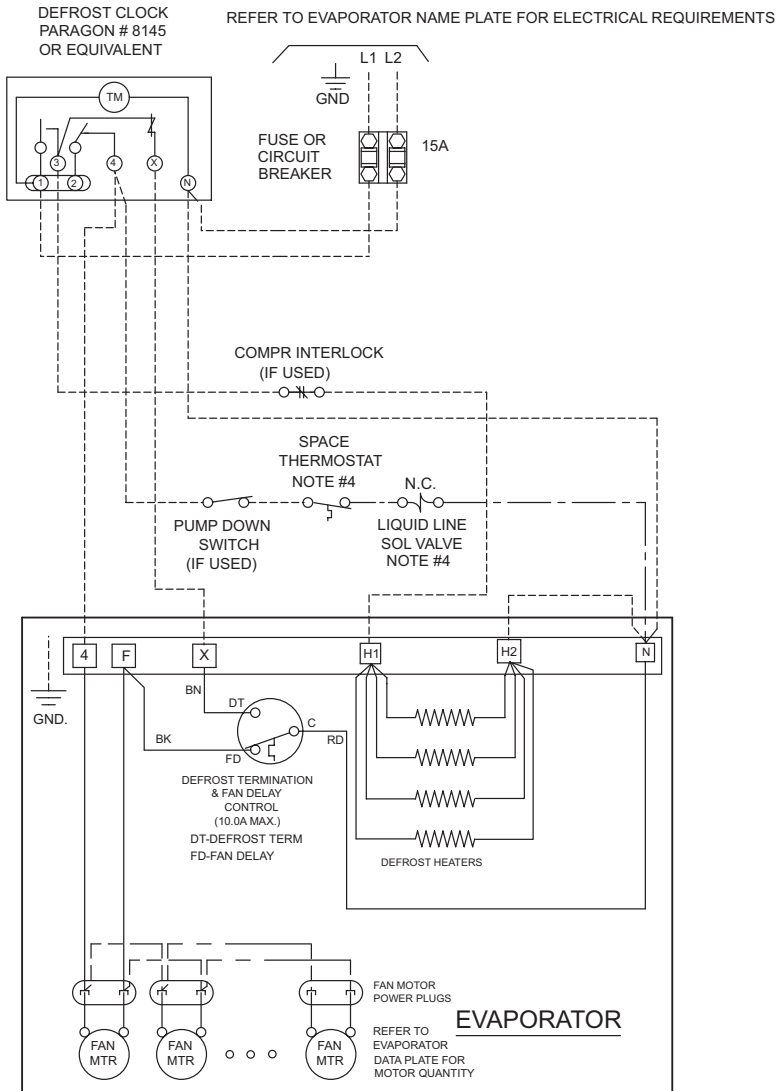
- FACTORY WIRING
- - - - - WIRING BY OTHERS
- OPTIONAL FACTORY OR BY OTHERS

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



# WIRING DIAGRAM - 208-230/1/60 ELECTRIC DEFROST MODELS SINGLE EVAPORATOR 12A MAX. HEATERS

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



## NOTES

- 1). USE COPPER CONDUCTORS ONLY
- 2). USE 90°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

2-LP ED 10/05

## 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.

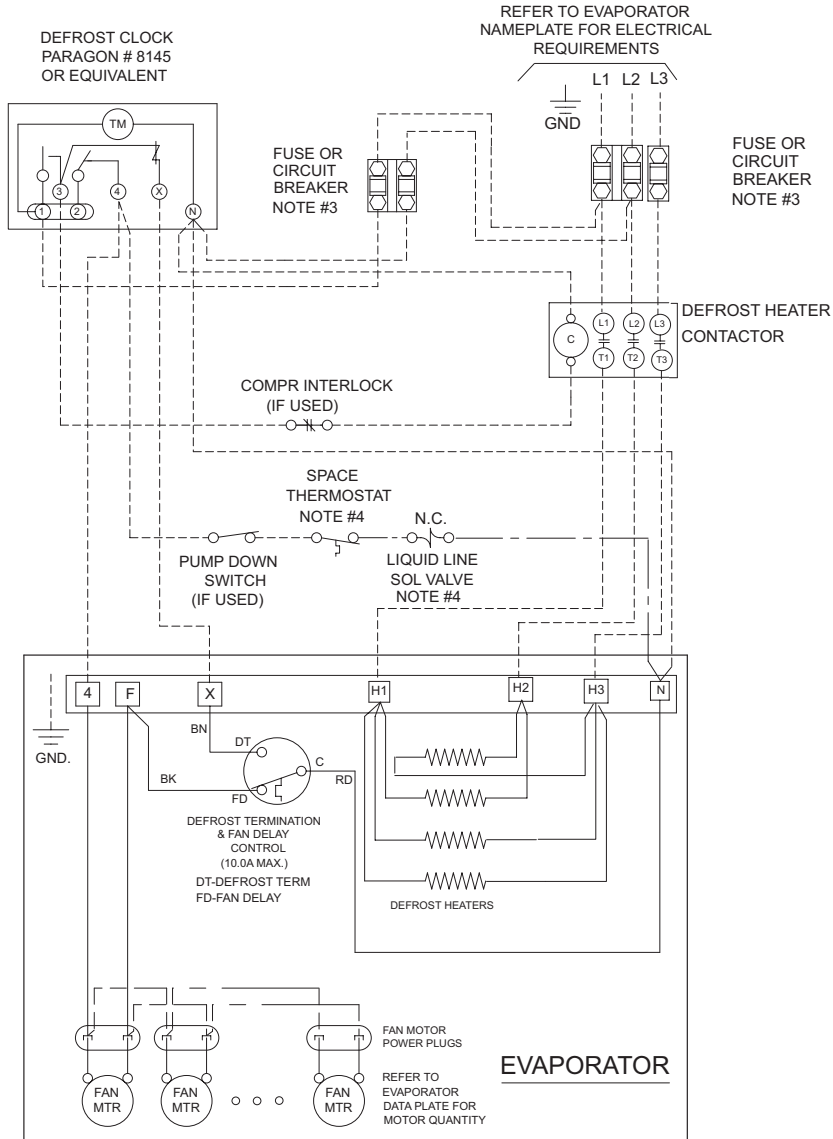


# WIRING DIAGRAM - 208-230/3/60

## ELECTRIC DEFROST MODELS

### SINGLE EVAPORATOR

FOR ALL MODELS USING 3 PHASE DEFROST HEATER CONTACTOR



#### NOTES

- 1). USE COPPER CONDUCTORS ONLY
- 2). USE 90°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

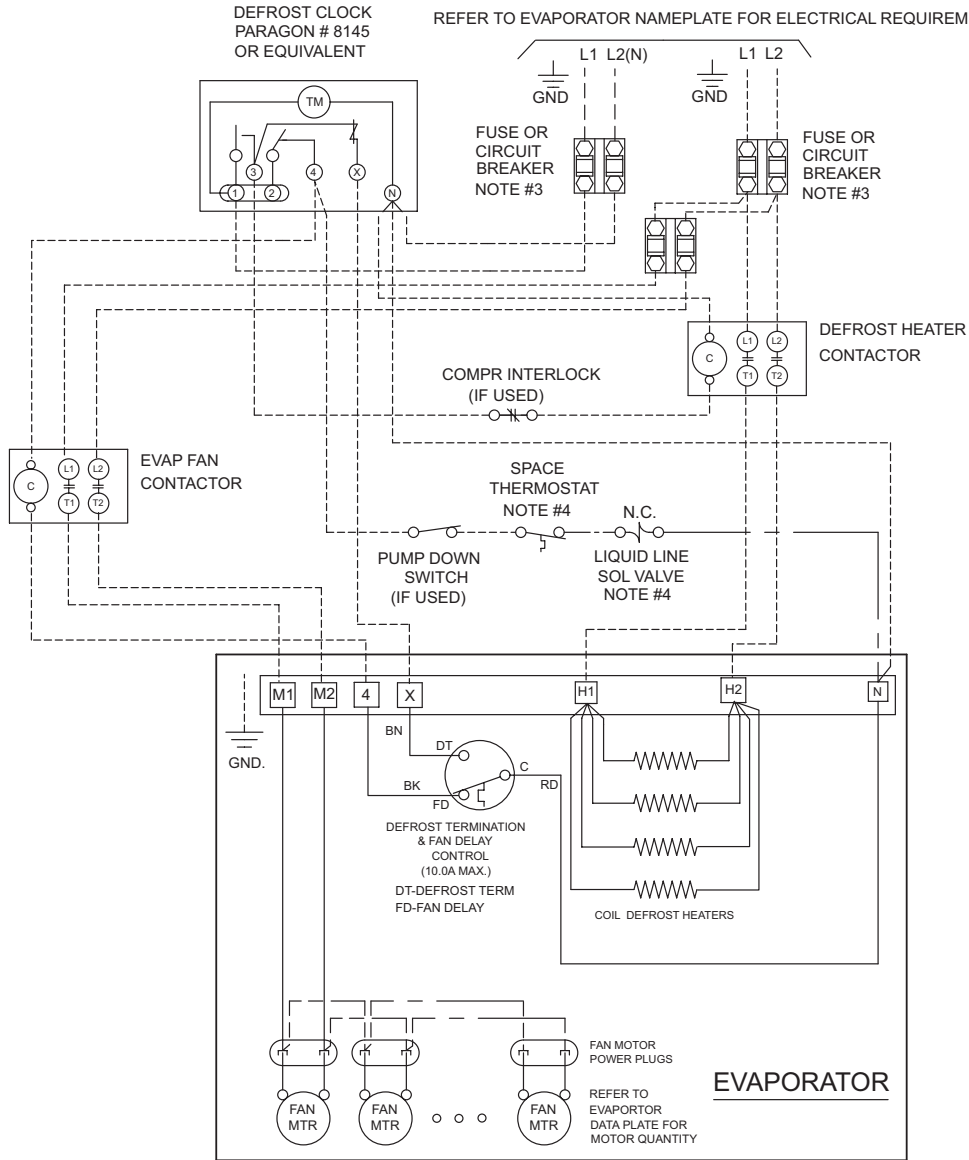
ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

3A-LP ED 3ph.CONTACTOR SINGLE 10/05



# WIRING DIAGRAM - 460/1/60 ELECTRIC DEFROST MODELS SINGLE EVAPORATOR

FOR ALL 460V MODELS USING DEFROST HEATER AND FAN CONTACTORS



## NOTES

- 1). USE COPPER CONDUCTORS ONLY
- 2). USE 90°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 10/05

## TERMINALS

- -COMPONENT TERMINAL
- -TERMINAL BLOCK TERMINAL

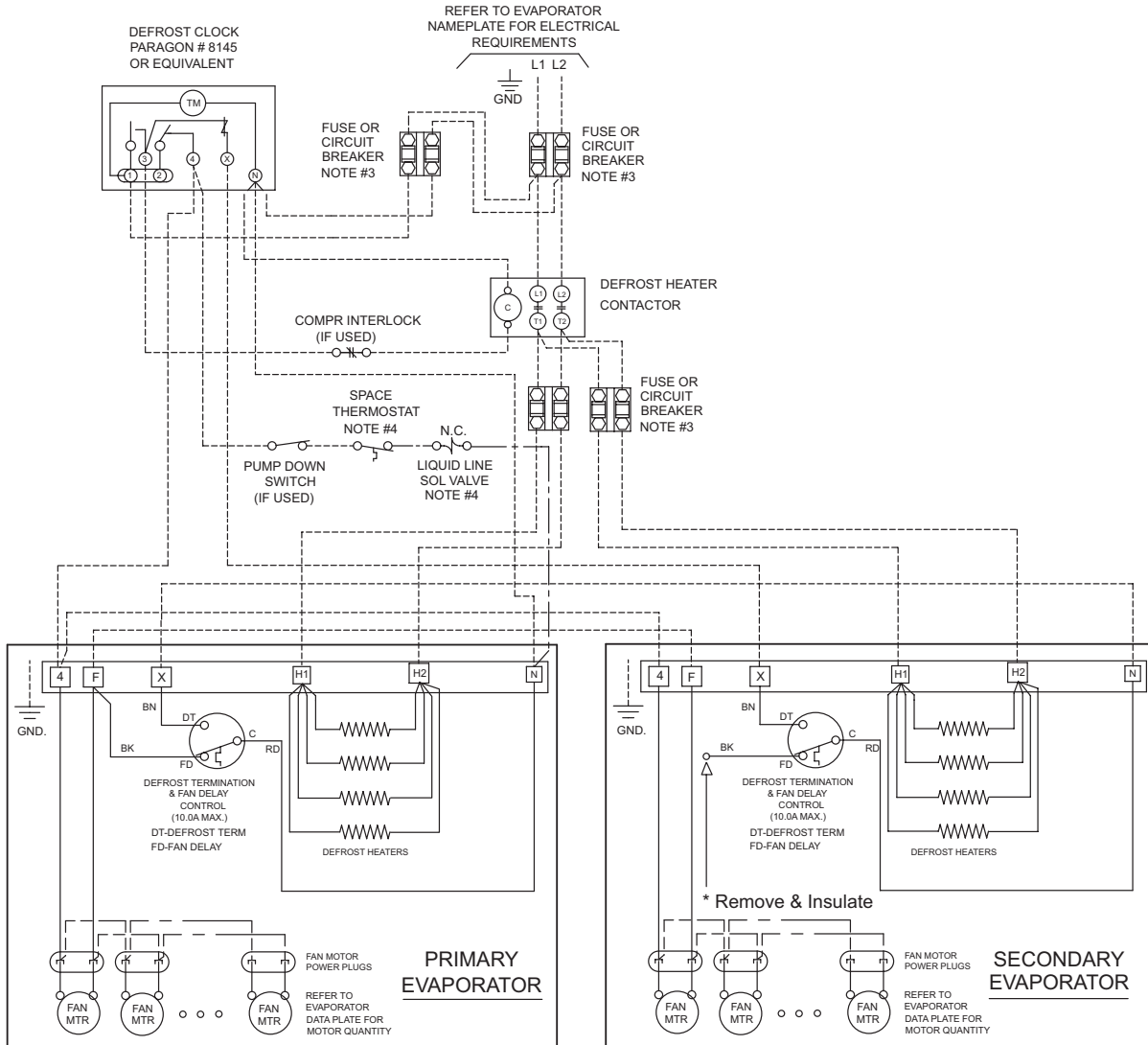
## CONDUCTORS/WIRING

- 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 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 90°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 10/05

## TERMINALS

- -COMPONENT TERMINAL
- -TERMINAL BLOCK TERMINAL

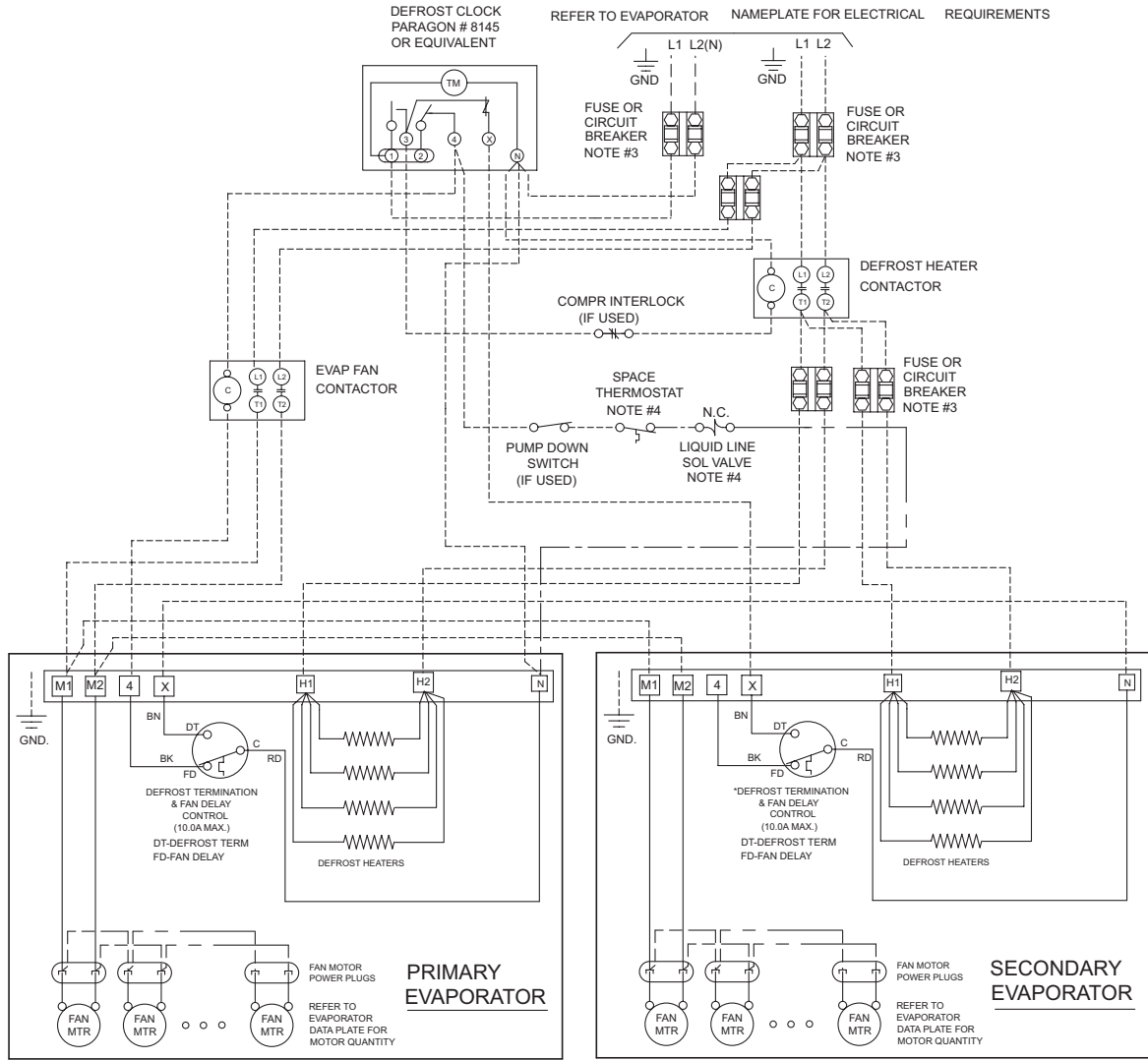
## CONDUCTORS/WIRING

- 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 ELECTRIC DEFROST MODELS MULTIPLE EVAPORATORS

FOR ALL 460V MODELS USING DEFROST HEATER AND FAN CONTACTORS



\* Note: Fan Delay not used on second evap

## NOTES

- 1). USE COPPER CONDUCTORS ONLY
- 2). USE 90°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

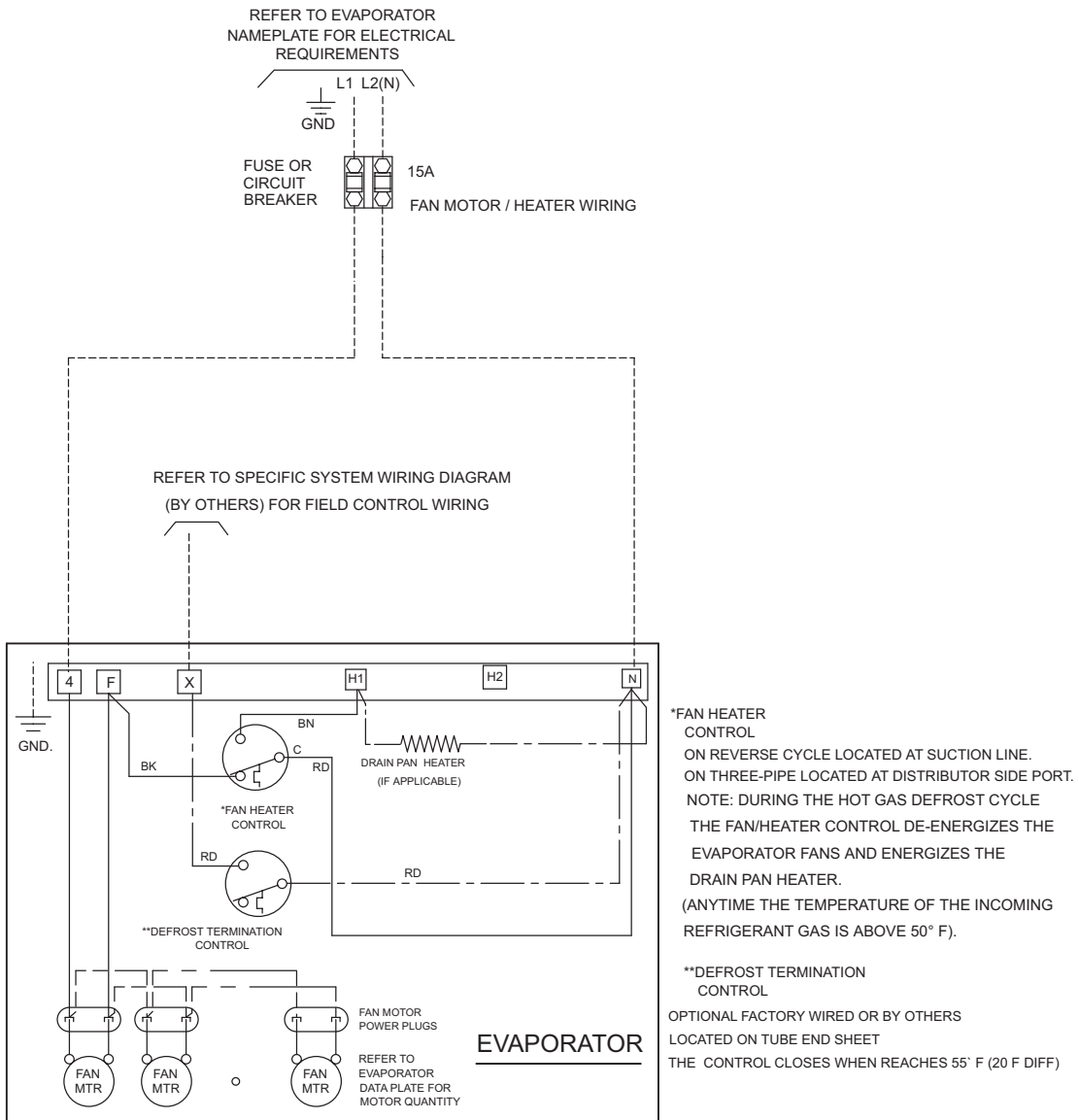
- FACTORY WIRING
- - - - - WIRING BY OTHERS
- · — · — · — OPTIONAL FACTORY OR BY OTHERS

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

8-LP 460v ED CONTACTOR MULTI 10/05

# WIRING DIAGRAM - 115/1/60, 208-230/1/60 HOT GAS DEFROST MODELS

USING MAXIMUM 15A HEATER OVERCURRENT PROTECTION



## NOTES

- 1). USE COPPER CONDUCTORS ONLY
- 2). USE 90°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

5-LP HG 1/06

## TERMINALS

- -COMPONENT TERMINAL
- -TERMINAL BLOCK TERMINAL

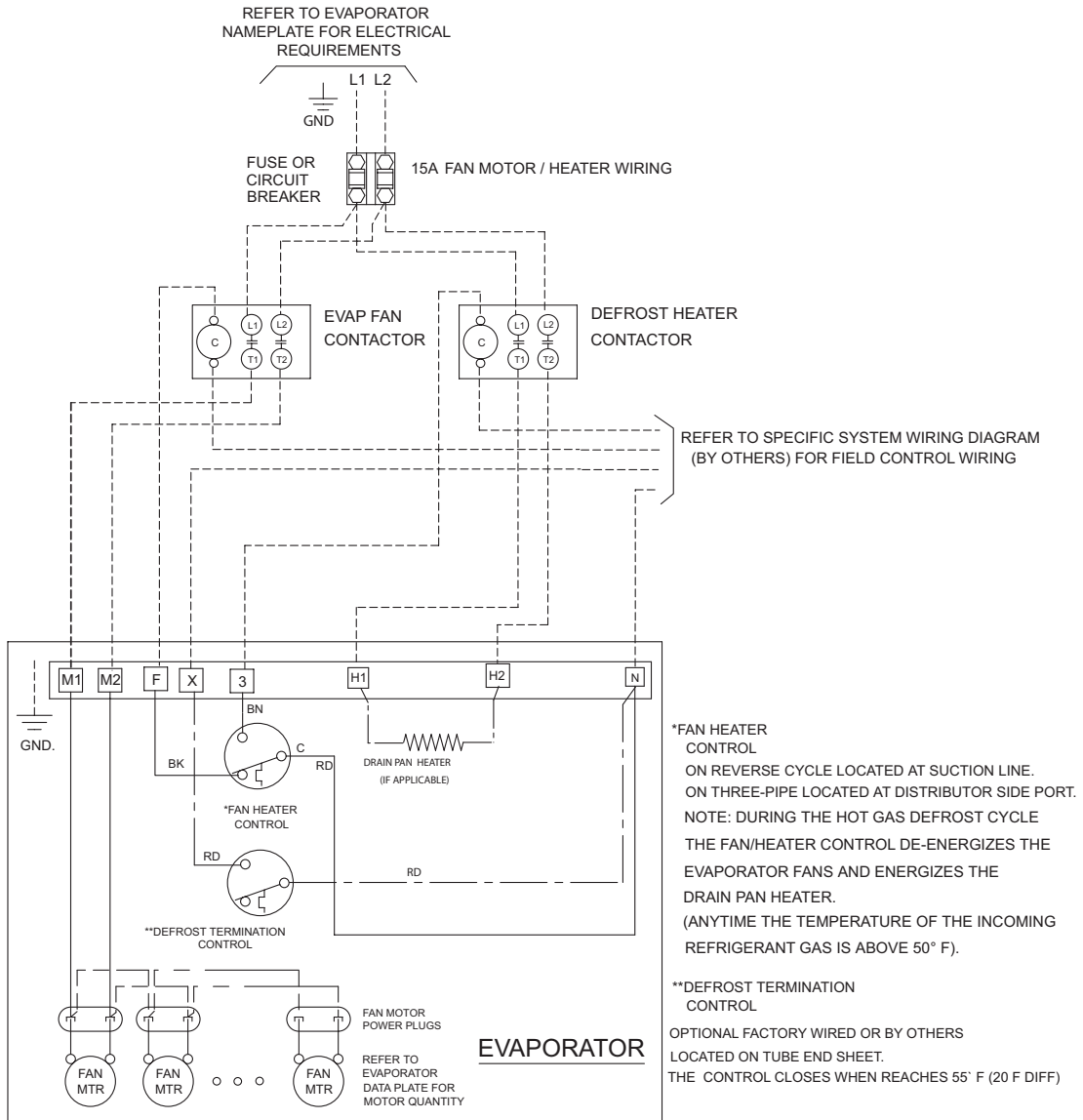
## CONDUCTORS/WIRING

- 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 HOT GAS DEFROST MODELS

## USING MAXIMUM 15A HEATER OVERCURRENT PROTECTION



### NOTES

- 1.) USE COPPER CONDUCTORS ONLY
- 2.) USE 90°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

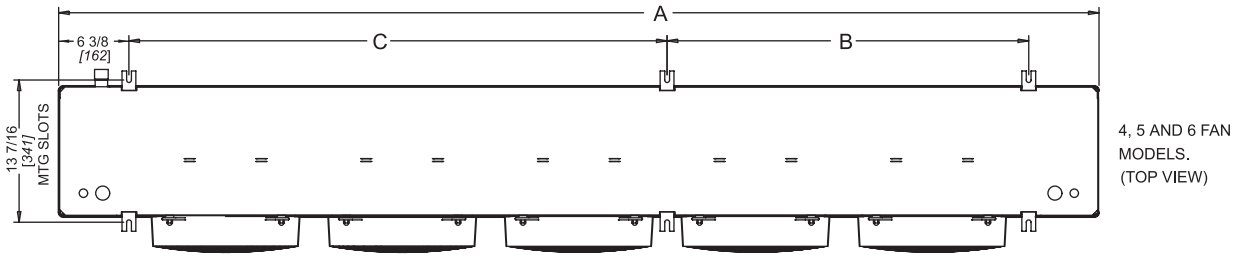
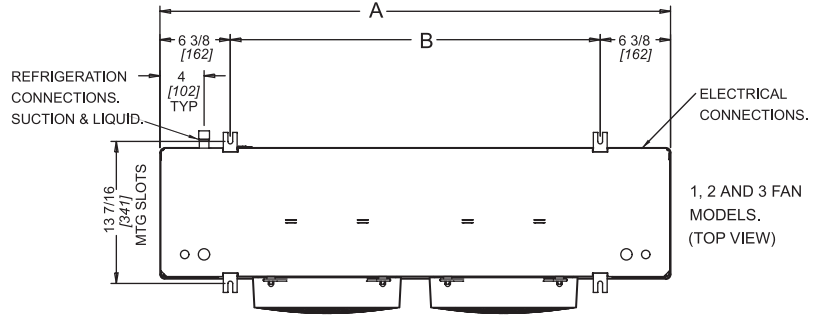
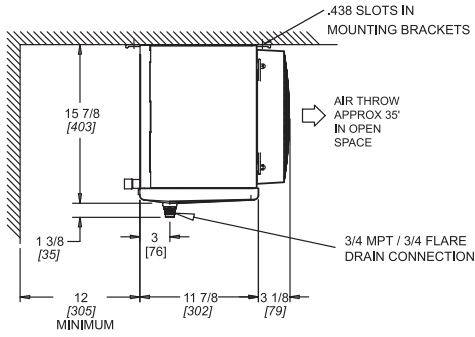
### CONDUCTORS/WIRING

- 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.

9-LP 460 HG 10/05

# DIMENSIONAL DATA



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

# = A, E, T, H, G, or R. <sup>^</sup> = A or E. T, H, G or R available in 2 to 6 fan models only Refer to Nomenclature for details

# SHIPPING WEIGHTS

## Air Defrost and Hot Gas Defrost with Drain Pan Heater Models

MODEL NUMBER								SHIPPING WEIGHT	
								LB.	(kg)
104MA	N/A	N/A	N/A	N/A	N/A	N/A	104WA	45	(20)
106MA	N/A	N/A	N/A	N/A	N/A	N/A	106WA	47	(21)
107MA	N/A	N/A	N/A	N/A	N/A	N/A	107WA	49	(22)
209MA	209MT	209MG	207LG	207LT	206VG	206VT	209WA	70	(32)
211MA	211MT	211MG	209LG	209LT	208VG	208VT	211WA	74	(33)
214MA	214MT	214MG	211LG	211LT	209VG	209VT	214WA	78	(35)
317MA	317MT	317MG	314LG	314LT	312VG	312VT	317WA	101	(46)
320MA	320MT	320MG	317LG	317LT	315VG	315VT	320WA	107	(48)
423MA	423MT	423MG	419LG	419LT	416VG	416VT	423WA	117	(53)
426MA	426MT	426MG	422LG	422LT	419VG	419VT	426WA	135	(61)
532MA	532MT	532MG	527LG	527LT	523VG	523VT	532WA	163	(74)
639MA	639MT	639MG	631LG	631LT	627VG	627VT	639WA	192	(87)

## Electric Defrost Models

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

## Hot Gas Defrost with Drain Pan Loop Models

MODEL NUMBER						SHIPPING WEIGHT	
						LB.	(kg)
104MH	104MR	104LH	104LR	N/A	N/A	57	(26)
106MH	106MR	105LH	105LR	N/A	N/A	59	(27)
107MH	107MR	106LH	106LR	N/A	N/A	61	(27)
209MH	209MR	207LH	207LR	206VH	206VR	87	(39)
211MH	211MR	209LH	209LR	208VH	208VR	91	(41)
214MH	214MR	211LH	211LR	209VH	209VR	95	(43)
317MH	317MR	314LH	314LR	312VH	312VR	124	(56)
320MH	320MR	317LH	317LR	315VH	315VR	130	(59)
423MH	423MR	419LH	419LR	416VH	416VR	145	(66)
426MH	426MR	422LH	422LR	419VH	419VR	163	(74)
532MH	532MR	527LH	527LR	523VH	523VR	198	(90)
639MH	639MR	631LH	631LR	627VH	627VR	233	(106)

# RECOMMENDED THERMAL EXPANSION VALVE SELECTIONS MEDIUM TEMPERATURE MODELS

MODEL	DISTRIBUTOR INLET SIZE	HOT GAS DISTRIBUTOR SIDE PORT	FACTORY INSTALLED NOZZLE	TXV FOR R404A / R507 *		TXV FOR R22		TXV FOR R134a	
				SPORLAN *	ALCO	SPORLAN	ALCO	SPORLAN	ALCO
104M	1/2	1/2	N/A	EGSE-1/4-C	HFESC 1/4 SC	EGVE-1/3-C	HFESC 1/4 HC	EGJE-1/6-C	HFESC 1/2 MC
106M	1/2	1/2	L-1/2	EGSE-1/4-C	HFESC 1/4 SC	EGVE-1/3-C	HFESC 1/2 HC	EGJE-1/4-C	HFESC 1/2 MC
107M	1/2	1/2	L-1/2	EGSE-1/2-C	HFESC 1/2 SC	EGVE-1/2-C	HFESC 1/2 HC	EGJE-1/2-C	HFESC 1/2 MC
209M	1/2	1/2	L-3/4	EGSE-1/2-C	HFESC 1/2 SC	EGVE-3/4-C	HFESC 1/2 HC	EGJE-1/2-C	HFESC 3/4 MC
211M	1/2	1/2	L-1	EGSE-1-C	HFESC 1/2 SC	EGVE-3/4-C	HFESC 1 HC	EGJE-1/2-C	HFESC 3/4 MC
214M	1/2	1/2	L-1	EGSE-1-C	HFESC 1 SC	EGVE-1-C	HFESC 1 HC	EGJE-1-C	HFESC 1 MC
317M	1/2	1/2	L-1 1/2	EGSE-1-C	HFESC 1-1/4 SC	EGVE-1-C	HFESC 1-1/2 HC	EGJE-1-C	HFESC 1 MC
320M	1/2	1/2	L-1 1/2	EGSE-1-1/2-C	HFESC 1-1/4 SC	EGVE-1-1/2-C	HFESC 1-1/2 HC	EGJE-1-C	HFESC 1-1/2 MC
423M	1/2	1/2	L-2	EGSE-1-1/2-C	HFESC 1-1/2 SC	EGVE-1-1/2-C	HFESC 1-1/2 HC	EGJE-1-C	HFESC 1-1/2 MC
426M	1/2	1/2	L-2	EGSE-1-1/2-C	HFESC 1-1/2 SC	EGVE-2-C	HFESC 2 HC	EGJE-1-1/2-C	HFESC 1-3/4 MC
532M	1/2	1/2	L-2 1/2	EGSE-2-C	HFESC 2 SC	EGVE-2-C	HFESC 2-1/2 HC	EGJE-2-C	HFESC 2-1/2 MC
639M	7/8	5/8	G-3	SSE-3-C	HFESC 3-1/2 SC	EGVE-3-C	HFESC 2-1/2 HC	EGJE-2-C	HFESC 2-1/2 MC

\* For R507, refrigerant code for Sporlan expansion valve will be "P" instead of "S" . i.e.: "EGSE" becomes "EGPE"

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



# RECOMMENDED THERMAL EXPANSION VALVE SELECTIONS

## LOW TEMPERATURE R404A/R507\* MODELS

MODEL	DISTRIB. INLET SIZE	HOT GAS DISTRIBUTOR SIDE PORT	FACTORY INSTALLED NOZZLE	TXV 0° F (-18° C) EVAP.		TXV -10° F (-23° C) EVAP.		TXV -20° F (-29° C) EVAP.	
				SPORLAN *	ALCO	SPORLAN *	ALCO	SPORLAN *	ALCO
104L	1/2	1/2	L-1/2	EGSE-1/4-ZP	HFESC 1/4 SC	EGSE-1/4-ZP	HFESC 1/4 SW45	EGSE-1/4-ZP	HFESC 1/2 SW45
105L	1/2	1/2	L-3/4	EGSE-1/2-ZP	HFESC 1/4 SC	EGSE-1/4-ZP	HFESC 1/2 SW45	EGSE-1/2-ZP	HFESC 1/2 SW45
106L	1/2	1/2	L-1	EGSE-1/2-ZP	HFESC 1/2 SC	EGSE-1/2-ZP	HFESC 1/2 SW45	EGSE-1/2-ZP	HFESC 1/2 SW45
207L	1/2	1/2	L-1	EGSE-1/2-ZP	HFESC 1/2 SC	EGSE-1/2-ZP	HFESC 1 SW45	EGSE-1/2-ZP	HFESC 1 SW45
209L	1/2	1/2	1-1/2	EGSE-1/2-ZP	HFESC 1 SC	EGSE-1/2-ZP	HFESC 1 SW45	EGSE-1-ZP	HFESC 1 SW45
211L	1/2	1/2	L-2	EGSE-1-ZP	HFESC 1 SC	EGSE-1-ZP	HFESC 1-1/4 SW45	EGSE-1-ZP	HFESC 1-1/4 SW45
314L	1/2	1/2	L-2	EGSE-1-ZP	HFESC 1-1/4 SC	EGSE-1-ZP	HFESC 1-1/2 SW45	EGSE-1-ZP	HFESC 1-1/2 SW45
317L	1/2	1/2	L-3	EGSE-1-1/2-ZP	HFESC 1-1/2 SC	EGSE-1-1/2-ZP	HFESC 1-1/2 SW45	EGSE-1-1/2-ZP	HFESC 2 SW45
419L	1/2	1/2	L-3	EGSEP-1-1/2-ZP	HFESC 1-1/2 SC	EGSE-1-1/2-ZP	HFESC 2 SW45	EGSE-1-1/2-ZP	HFESC 2 SW45
422L	7/8	5/8	G-4	EGSE-2-ZP	HFESC 2 SC	EGSE-2-ZP	HFESC 2 SW45	EGSE-2-ZP	HFESC 2 SW45
527L	7/8	5/8	G-4	SSE-3-ZP	HFESC 2 SC	SSE-3-ZP	HFESC 3-1/2 SW45	SSE-3-ZP	HFESC 3-1/2 SW45
631L	7/8	5/8	G-5	SSE-3-ZP	HFESC 3-1/2 SC	SSE-3-ZP	HFESC 3-1/2 SW45	SSE-3-ZP	HFESC 3-1/2 SW45
103V	1/2	1/2	L-1/2	EGSE-1/4-ZP	HFESC 1/4 SC	EGSE-1/4-ZP	HFESC 1/4 SW45	EGSE-1/4-ZP	HFESC 1/4 SW45
104V	1/2	1/2	L-3/4	EGSE-1/4-ZP	HFESC 1/4 SC	EGSE-1/4-ZP	HFESC 1/4 SW45	EGSE-1/4-ZP	HFESC 1/2 SW45
105V	1/2	1/2	L-1	EGSE-1/2-ZP	HFESC 1/4 SC	EGSE-1/2-ZP	HFESC 1/2 SW45	EGSE-1/2-ZP	HFESC 1/2 SW45
206V	1/2	1/2	L-1	EGSE-1/2-ZP	HFESC 1/2 SC	EGSE-1/2-ZP	HFESC 1/2 SW45	EGSE-1/2-ZP	HFESC 1 SW45
208V	1/2	1/2	L-1 1/2	EGSE-1/2-ZP	HFESC 1/2 SC	EGSE-1/2-ZP	HFESC 1 SW45	EGSE-1/2-ZP	HFESC 1 SW45
209V	1/2	1/2	L-2	EGSE-1-ZP	HFESC 1 SC	EGSE-1-ZP	HFESC 1 SW45	EGSE-1-ZP	HFESC 1-1/4 SW45
312V	1/2	1/2	L-2	EGSE-1-ZP	HFESC 1 SC	EGSE-1-ZP	HFESC 1-1/4 SW45	EGSE-1-ZP	HFESC 1-1/2 SW45
315V	1/2	1/2	L-2 1/2	EGSE-1-ZP	HFESC 1-1/4 SC	EGSE-1-ZP	HFESC 1-1/2 SW45	EGSE-1-ZP	HFESC 1-1/2 SW45
416V	1/2	1/2	L-2 1/2	EGSE-1-ZP	HFESC 1-1/4 SC	EGSE-1-ZP	HFESC 1-1/2 SW45	EGSE-1-1/2-ZP	HFESC 2 SW45
419V	7/8	5/8	G-3	EGSE-1-1/2-ZP	HFESC 1-1/2 SC	EGSE-1-1/2-ZP	HFESC 2 SW45	EGSE-1-1/2-ZP	HFESC 2 SW45
523V	7/8	5/8	G-4	EGSE-2-ZP	HFESC 2 SC	EGSE-2-ZP	HFESC 2 SW45	EGSE-2-ZP	HFESC 3-1/2 SW45
627V	7/8	5/8	G-5	SSE-3-ZP	HFESC 3-1/2 SC	SSE-3-ZP	HFESC 3-1/2 SW45	SSE-3-ZP	HFESC 3-1/2 SW45

\* For R507, refrigerant code for Sporlan expansion valve will be "P" instead of "S" . i.e.: "EGSE" becomes "EGPE"

MODEL	DISTRIB. INLET SIZE	HOT GAS DISTRIBUTOR SIDE PORT	FACTORY INSTALLED NOZZLE	TXV -30° F (-34° C) EVAP.		TXV -40° F (-40° C) EVAP.	
				SPORLAN *	ALCO	SPORLAN *	ALCO
104L	1/2	1/2	L-1/2	EGSE-1/4-ZP	HFESC 1/2 SW45	EGSE-1/4-ZP	HFESC 1/2 SW45
105L	1/2	1/2	L-3/4	EGSE-1/2-ZP	HFESC 1/2 SW45	EGSE-1/2-ZP	HFESC 1/2 SW45
106L	1/2	1/2	L-1	EGSE-1/2-ZP	HFESC 1 SW45	EGSE-1/2-ZP	HFESC 1 SW45
207L	1/2	1/2	L-1	EGSE-1/2-ZP	HFESC 1 SW45	EGSE-1/2-ZP	HFESC 1-1/4 SW45
209L	1/2	1/2	1-1/2	EGSE-1-ZP	HFESC 1-1/4 SW45	EGSE-1-ZP	HFESC 1-1/4 SW45
211L	1/2	1/2	L-2	EGSE-1-ZP	HFESC 1-1/2 SW45	EGSE-1-ZP	HFESC 1-1/2 SW45
314L	1/2	1/2	L-2	EGSE-1-ZP	HFESC 2 SW45	EGSE-1-ZP	HFESC 2 SW45
317L	1/2	1/2	L-3	EGSE-1-1/2-ZP	HFESC 2 SW45	EGSE-1-1/2-ZP	HFESC 2 SW45
419L	1/2	1/2	L-3	EGSE-1-1/2-ZP	HFESC 2 SW45	EGSE-1-1/2-ZP	HFESC 3-1/2 SW45
422L	7/8	5/8	G-4	EGSE-2-ZP	HFESC 3-1/2 SW45	EGSE-2-ZP	HFESC 3-1/2 SW45
527L	7/8	5/8	G-4	SSE-3-ZP	HFESC 3-1/2 SW45	SSE-3-ZP	HFESC 3-1/2 SW45
631L	7/8	5/8	G-5	SSE-3-ZP	HFESC 3-1/2 SW45	SSE-3-ZP	HFESC 5 SW45
103V	1/2	1/2	L-1/2	EGSE-1/4-ZP	HFESC 1/4 SW45	EGSE-1/4-ZP	HFESC 1/2 SW45
104V	1/2	1/2	L-3/4	EGSE-1/4-ZP	HFESC 1/2 SW45	EGSE-1/2-ZP	HFESC 1/2 SW45
105V	1/2	1/2	L-1	EGSE-1/2-ZP	HFESC 1/2 SW45	EGSE-1/2-ZP	HFESC 1 SW45
206V	1/2	1/2	L-1	EGSE-1/2-ZP	HFESC 1 SW45	EGSE-1/2-ZP	HFESC 1 SW45
208V	1/2	1/2	L-1 1/2	EGSE-1/2-ZP	HFESC 1 SW45	EGSE-1/2-ZP	HFESC 1-1/4 SW45
209V	1/2	1/2	L-2	EGSE-1-ZP	HFESC 1-1/4 SW45	EGSE-1-ZP	HFESC 1-1/2 SW45
312V	1/2	1/2	L-2	EGSE-1-ZP	HFESC 1-1/2 SW45	EGSE-1-ZP	HFESC 2 SW45
315V	1/2	1/2	L-2 1/2	EGSE-1-1/2-ZP	HFESC 2 SW45	EGSE-1-1/2-ZP	HFESC 2 SW45
416V	1/2	1/2	L-2 1/2	EGSE-1-1/2-ZP	HFESC 2 SW45	EGSE-1-1/2-ZP	HFESC 2 SW45
419V	7/8	5/8	G-3	EGSE-1-1/2-ZP	HFESC 2 SW45	EGSE-2-ZP	HFESC 3-1/2 SW45
523V	7/8	5/8	G-4	EGSE-2-ZP	HFESC 3-1/2 SW45	EGSE-2-ZP	HFESC 3-1/2 SW45
627V	7/8	5/8	G-5	SSE-3-ZP	HFESC 3-1/2 SW45	SSE-3-ZP	HFESC 5 SW45

\* For R507, refrigerant code for Sporlan expansion valve will be "P" instead of "S" . i.e.: "EGSE" becomes "EGPE"

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

# RECOMMENDED THERMAL EXPANSION VALVE SELECTIONS

## LOW TEMPERATURE R22 MODELS

MODEL	DISTRIB. INLET SIZE	HOT GAS DISTRIBUTOR SIDE PORT	FACTORY INSTALLED NOZZLE	TXV 0° F (-18° C) EVAP.		TXV -10° F (-23° C) EVAP.		TXV -20° F (-29° C) EVAP.	
				SPORLAN	ALCO	SPORLAN	ALCO	SPORLAN	ALCO
104L	1/2	1/2	L-1/2	EGVE-1/3-ZP40	HFESC 1/4 HC	EGVE-1/3-ZP40	HFESC 1/4 HZ	EGVE-1/3-ZP40	HFESC 1/2 HZ
105L	1/2	1/2	L-3/4	EGVE-1/3-ZP40	HFESC 1/2 HC	EGVE-1/2-ZP40	HFESC 1/2 HZ	EGVE-1/2-ZP40	HFESC 1/2 HZ
106L	1/2	1/2	L-1	EGVE-1/2-ZP40	HFESC 1/2 HC	EGVE-3/4-ZP40	HFESC 1/2 HZ	EGVE-3/4-ZP40	HFESC 1/2 HZ
207L	1/2	1/2	L-1	EGVE-3/4-ZP40	HFESC 1/2 HC	EGVE-3/4-ZP40	HFESC 1 HZ	EGVE-3/4-ZP40	HFESC 1 HZ
209L	1/2	1/2	L-1 1/2	EGVE-3/4-ZP40	HFESC 1 HC	EGVE-3/4-ZP40	HFESC 1 HZ	EGVE-3/4-ZP40	HFESC 1 HZ
211L	1/2	1/2	L-2	EGVE-1-ZP40	HFESC 1 HC	EGVE-1-ZP40	HFESC 1 HZ	EGVE-1-ZP40	HFESC 1-1/2 HZ
314L	1/2	1/2	L-2	EGVE-1-1/2-ZP40	HFESC 1-1/2 HC	EGVE-1-1/2-ZP40	HFESC 1-1/2 HZ	EGVE-1-1/2-ZP40	HFESC 1-1/2 HZ
317L	1/2	1/2	L-3	EGVE-1-1/2-ZP40	HFESC 1-1/2 HC	EGVE-1-1/2-ZP40	HFESC 1-1/2 HZ	EGVE-2-ZP40	HFESC 2 HZ
419L	1/2	1/2	L-3	EGVE-1-1/2-ZP40	HFESC 1-1/2 HC	EGVE-2-ZP40	HFESC 2 HZ	EGVE-2-ZP40	HFESC 2 HZ
422L	7/8	5/8	G-4	EGVE-1-1/2-ZP40	HFESC 2 HC	EGVE-2-ZP40	HFESC 2 HZ	EGVE-2-ZP40	HFESC 2-1/2 HZ
527L	7/8	5/8	G-4	EGVE-3-ZP40	HFESC 2-1/2 HC	EGVE-3-ZP40	HFESC 2-1/2 HZ	EGVE-3-ZP40	HFESC 3 HZ
631L	7/8	5/8	G-5	EGVE-3-ZP40	HFESC 2-1/2 HC	EGVE-3-ZP40	HFESC 3 HZ	SVE-4-ZP40	HFESC 3 HZ
103V	1/2	1/2	L-1/2	EGVE-1/3-ZP40	HFESC 1/4 HC	EGVE-1/3-ZP40	HFESC 1/4 HZ	EGVE-1/3-ZP40	HFESC 1/4 HZ
104V	1/2	1/2	L-3/4	EGVE-1/3-ZP40	HFESC 1/4 HC	EGVE-1/2-ZP40	HFESC 1/2 HZ	EGVE-1/2-ZP40	HFESC 1/2 HZ
105V	1/2	1/2	L-1	EGVE-1/3-ZP40	HFESC 1/2 HC	EGVE-1/2-ZP40	HFESC 1/2 HZ	EGVE-3/4-ZP40	HFESC 1/2 HZ
206V	1/2	1/2	L-1	EGVE-1/2-ZP40	HFESC 1/2 HC	EGVE-3/4-ZP40	HFESC 1/2 HZ	EGVE-3/4-ZP40	HFESC 1 HZ
208V	1/2	1/2	L-1 1/2	EGVE-3/4-ZP40	HFESC 1/2 HC	EGVE-3/4-ZP40	HFESC 1 HZ	EGVE-3/4-ZP40	HFESC 1 HZ
209V	1/2	1/2	L-2	EGVE-3/4-ZP40	HFESC 1 HC	EGVE-3/4-ZP40	HFESC 1 HZ	EGVE-1-ZP40	HFESC 1 HZ
312V	1/2	1/2	L-2	EGVE-1-ZP40	HFESC 1 HC	EGVE-1-ZP40	HFESC 1-1/2 HZ	EGVE-1-1/2-ZP40	HFESC 1-1/2 HZ
315V	1/2	1/2	L-3	EGVE-1-1/2-ZP40	HFESC 1-1/2 HC	EGVE-1-1/2-ZP40	HFESC 1-1/2 HZ	EGVE-1-1/2-ZP40	HFESC 1-1/2 HZ
416V	1/2	1/2	L-3	EGVE-1-1/2-ZP40	HFESC 1-1/2 HC	EGVE-1-1/2-ZP40	HFESC 1-1/2 HZ	EGVE-1-1/2-ZP40	HFESC 2 HZ
419V	7/8	5/8	G-4	EGVE-1-1/2-ZP40	HFESC 1-1/2 HC	EGVE-2-ZP40	HFESC 2 HZ	EGVE-2-ZP40	HFESC 2 HZ
523V	7/8	5/8	G-4	EGVE-2-ZP40	HFESC 2 HC	EGVE-2-ZP40	HFESC 2-1/2 HZ	EGVE-2-ZP40	HFESC 2-1/2 HZ
627V	7/8	5/8	G-5	EGVE-3-ZP40	HFESC 2-1/2 HC	EGVE-3-ZP40	HFESC 2-1/2 HZ	EGVE-3-ZP40	HFESC 3 HZ

MODEL	DISTRIB. INLET SIZE	HOT GAS DISTRIBUTOR SIDE PORT	FACTORY INSTALLED NOZZLE	TXV -30° F (-34° C) EVAP.		TXV -40° F (-40° C) EVAP.	
				SPORLAN	ALCO	SPORLAN	ALCO
104L	1/2	1/2	L-1/2	EGVE-1/2-ZP40	HFESC 1/2 HZ	EGVE-1/2-ZP40	HFESC 1/2 HZ
105L	1/2	1/2	L-3/4	EGVE-3/4-ZP40	HFESC 1/2 HZ	EGVE-3/4-ZP40	HFESC 1/2 HZ
106L	1/2	1/2	L-1	EGVE-3/4-ZP40	HFESC 1 HZ	EGVE-3/4-ZP40	HFESC 1 HZ
207L	1/2	1/2	L-1	EGVE-3/4-ZP40	HFESC 1 HZ	EGVE-3/4-ZP40	HFESC 1 HZ
209L	1/2	1/2	L-1 1/2	EGVE-1-ZP40	HFESC 1 HZ	EGVE-1-ZP40	HFESC 1-1/2 HZ
211L	1/2	1/2	L-2	EGVE-1-1/2-ZP40	HFESC 1-1/2 HZ	EGVE-1-1/2-ZP40	HFESC 1-1/2 HZ
314L	1/2	1/2	L-2	EGVE-1-1/2-ZP40	HFESC 2 HZ	EGVE-1-1/2-ZP40	HFESC 2 HZ
317L	1/2	1/2	L-3	EGVE-2-ZP40	HFESC 2 HZ	EGVE-2-ZP40	HFESC 2-1/2 HZ
419L	1/2	1/2	L-3	EGVE-2-ZP40	HFESC 2-1/2 HZ	EGVE-2-ZP40	HFESC 2-1/2 HZ
422L	7/8	5/8	G-4	EGVE-2-ZP40	HFESC 2-1/2 HZ	EGVE-3-ZP40	HFESC 3 HZ
527L	7/8	5/8	G-4	EGVE-3-ZP40	HFESC 3 HZ	SVE-4-ZP40	HFESC 3 HZ
631L	7/8	5/8	G-5	SVE-4-ZP40	HFESC 3 HZ	SVE-4-ZP40	HFESC 5-1/2 HZ
103V	1/2	1/2	L-1/2	EGVE-1/3-ZP40	HFESC 1/2 HZ	EGVE-1/2-ZP40	HFESC 1/2 HZ
104V	1/2	1/2	L-3/4	EGVE-1/2-ZP40	HFESC 1/2 HZ	EGVE-3/4-ZP40	HFESC 1/2 HZ
105V	1/2	1/2	L-1	EGVE-3/4-ZP40	HFESC 1/2 HZ	EGVE-3/4-ZP40	HFESC 1 HZ
206V	1/2	1/2	L-1	EGVE-3/4-ZP40	HFESC 1 HZ	EGVE-3/4-ZP40	HFESC 1 HZ
208V	1/2	1/2	L-1 1/2	EGVE-3/4-ZP40	HFESC 1 HZ	EGVE-1-ZP40	HFESC 1 HZ
209V	1/2	1/2	L-2	EGVE-1-ZP40	HFESC 1-1/2 HZ	EGVE-1-1/2-ZP40	HFESC 1-1/2 HZ
312V	1/2	1/2	L-2	EGVE-1-1/2-ZP40	HFESC 1-1/2 HZ	EGVE-1-1/2-ZP40	HFESC 1-1/2 HZ
315V	1/2	1/2	L-3	EGVE-1-1/2-ZP40	HFESC 2 HZ	EGVE-2-ZP40	HFESC 2 HZ
416V	1/2	1/2	L-3	EGVE-2-ZP40	HFESC 2 HZ	EGVE-2-ZP40	HFESC 2 HZ
419V	7/8	5/8	G-4	EGVE-2-ZP40	HFESC 2-1/2 HZ	EGVE-2-ZP40	HFESC 2-1/2 HZ
523V	7/8	5/8	G-4	EGVE-3-ZP40	HFESC 3 HZ	EGVE-3-ZP40	HFESC 3 HZ
627V	7/8	5/8	G-5	SVE-4-ZP40	HFESC 3 HZ	SVE-4-ZP40	HFESC 3 HZ

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 INSTRUCTIONS

## INSTALLATION

The installation and start-up of Unit Coolers 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

LP unit coolers are designed for walk-in cooler and freezer applications used with refrigerant R22 or R404A. For room temperatures above 35°F (2 °C) AND evaporating temperatures above 26°F (-3 °C), positive defrosting means (with electric or hot gas) may not be required, otherwise, electric defrost or hot gas 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) SELECTION

All units require the use of an **externally equalized** expansion valve. (A 1/4" (6 mm) O.D. equalizer line has been provided on the coil) TX valves should **not** be selected strictly by their nominal ton rating. (This rating is based at a specific pressure differential and entering liquid temperature). Since applications will differ it is suggested the following selection procedure be followed.

1. Determine actual unit cooler capacity.  
The nominal rating is based at 10°F T.D. (5.6°C) (Entering Air Temp. minus Evap. Temp.), R404A refrigerant. For R22, use the rated capacity x 0.95. For medium temperature R134a, use the rated capacity x 0.90. Note that a higher / lower operating T.D. will increase / decrease this capacity rating by their direct ratio within a range of 8 to 12°F (4.4 to 6.7°C) T.D.
2. Determine the pressure drop across the valve by subtracting the evaporating pressure and distributor pressure drop from the high side liquid pressure.  
The distributor pressure drop is typically in the range of 20 to 35 psig (1.4 to 2.4 bar) depending on the type of refrigerant and operating conditions.
3. Estimate entering liquid temperature. Temperatures lower than 100°F (38 °C) increase valve capacity ratings. Refer to valve manufacturer's specs for details.
4. Select valve from the valve manufacturer selection charts for the appropriate refrigerant, evaporating temp and pressure drop.

For best performance, the outlet of the expansion valve should be installed directly to the distributor body. If this is not possible, a straight tube up to 12 inches may be used for the connection.

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 o'clock position and insulate with a waterproof type of insulation. Clamp the bulb to ensure 100% contact of the bulb with the suction line.

Ensure appropriate nozzle has been installed in the distributor before installing valve. 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.

# INSTALLATION INSTRUCTIONS

## NOZZLE INSTALLATION

For common applications (Medium temp. R404A, R22, 8 to 12°F (4.4 to 6.7°C) T.D.; low temp. R404A, 8 to 12°F (4.4 to 6.7°C) T.D.) the nozzle for all models has been factory installed. For other applications, refer to nozzle manufacturer's selection guide. To replace a nozzle, the nozzle retainer clip (in distributor) must be removed before inserting nozzle. Re-install clip ensuring nozzle is properly in place. A small nozzle can be drilled larger using the drill size listed in table on page 23. Ensure the hole must be accurately centered and smooth. A lathe is preferred for the drilling.

## 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 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.

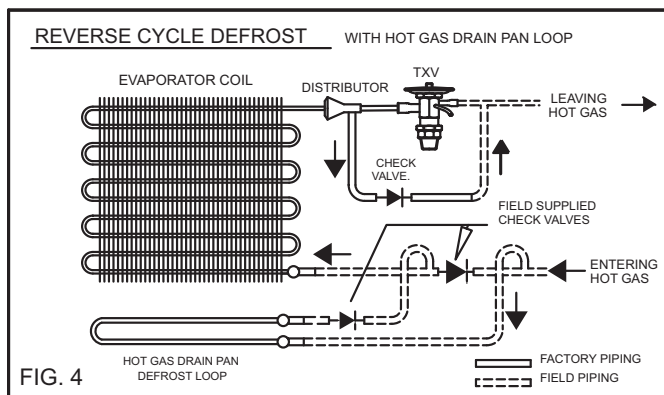
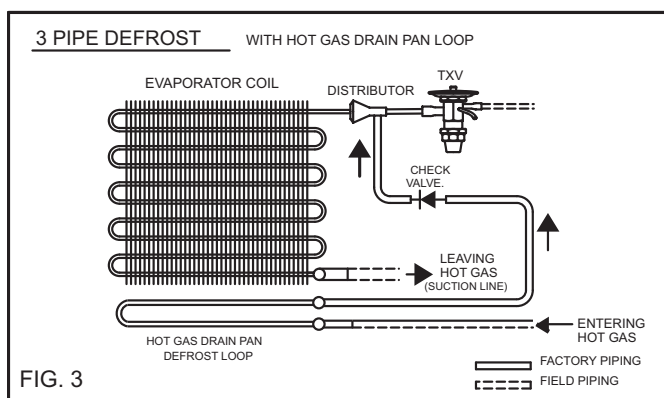
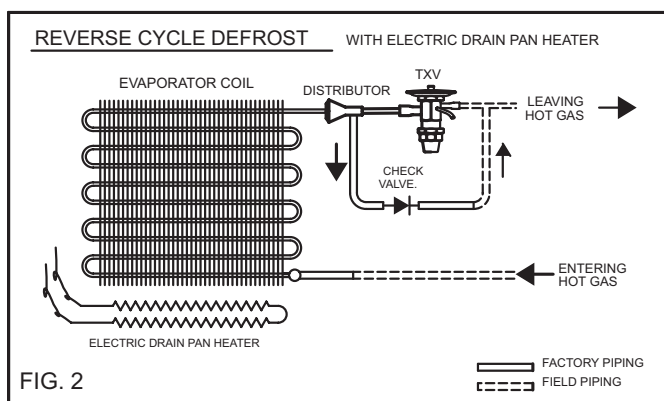
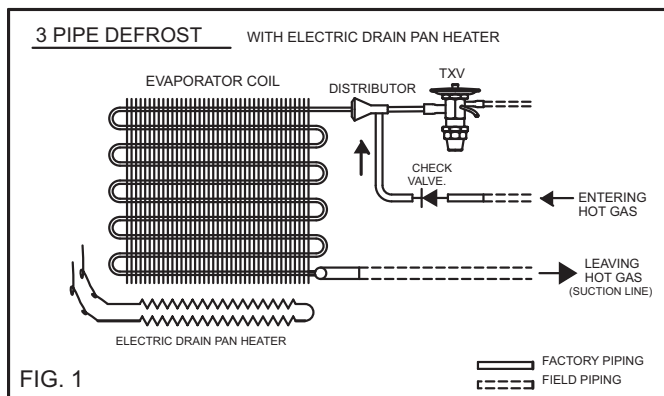
**Ensure that the drain line has sufficient slope for proper drainage (prevention of ice build up/blockage in pan).**

## 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.

For hot gas models, see following drawings for recommended piping.



# INSTALLATION INSTRUCTIONS

## 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. All systems preferably include a liquid line solenoid valve at immediately up stream of the expansion valve.
4. Thorough evacuation and dehydration has been performed.
5. The suction, discharge, and receiver service valves must be open.
6. The system preferably include a liquid line filter drier moisture indicator and suction filter.
7. 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 unit cooler. 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.

# GLYCOL FLUID AIR COOLER DATA

# 60Hz

MODEL	NO. OF FANS	AIRFLOW		CAPACITY * - 5 USGPM (.032 L/S)				CAPACITY * - 15 USGPM (.095 L/S)				CONN. SIZE (IN/OUT)
		CFM	(L/S)	BTU/H	(WATTS)	P.D. (FT. H <sub>2</sub> O)	P.D. (kPa)	BTU/H	(WATTS)	P.D. (FT. H <sub>2</sub> O)	P.D. (kPa)	
<b>104W</b>	1	1010	(480)	2100	(620)	6.9	(20.7)	2500	(730)	17	(51.7)	7/8
<b>106W</b>	1	950	(450)	2800	(820)	3.2	(9.7)	3100	(910)	8.1	(24.1)	7/8
<b>107W</b>	1	900	(430)	3400	(1000)	4.4	(13.1)	3700	(1080)	4.6	(13.8)	7/8
<b>209W</b>	2	2020	(950)	3800	(1110)	10	(31.0)	5000	(1470)	25	(73.8)	7/8
<b>211W</b>	2	1910	(900)	4900	(1440)	4.8	(14.5)	5700	(1670)	12	(35.2)	7/8
<b>214W</b>	2	1800	(850)	5900	(1730)	6.5	(19.3)	6700	(1960)	6.9	(20.7)	7/8
<b>317W</b>	3	2860	(1350)	6600	(1930)	6.5	(19.3)	8000	(2340)	15	(46.2)	7/8
<b>320W</b>	3	2700	(1270)	8000	(2340)	8.8	(26.2)	9400	(2750)	9.2	(27.6)	7/8
<b>423W</b>	4	3810	(1800)	8100	(2370)	8.1	(24.1)	10000	(2930)	19	(57.2)	7/8
<b>426W</b>	4	3600	(1700)	9800	(2870)	11	(32.4)	12000	(3520)	11	(33.8)	7/8
<b>532W</b>	5	4500	(2120)	11000	(3220)	13	(38.6)	14000	(4100)	14	(40.7)	7/8
<b>639W</b>	6	5400	(2550)	13000	(3810)	15	(45.5)	16000	(4690)	16	(46.9)	7/8

The above capacities were rated based on 30% Propylene Glycol, 25°F (-4°C) glycol entering temperature and 35°F (-2°C) air entering temperature with glycol flow rate listed. For all other conditions, please use "Pi-Coil" software (contact factory).

# NOTES

# SERVICE PARTS LIST

**Service Parts List  
Label  
To Be Attached  
HERE**

## PROJECT INFORMATION

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



NATIONAL REFRIGERATION &  
AIR CONDITIONING CANADA CORP.



**CANADA**

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