



KTL Two-Way Low Profile Unit Coolers

PRODUCT DATA & INSTALLATION

Bulletin K30-KTL-PDI-1

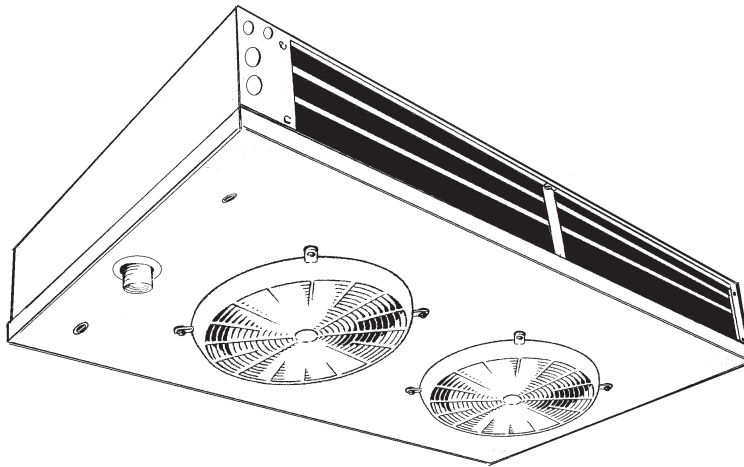
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We are on the Internet 
www.keepriterefrigeration.com

High, Medium and Low
Temperature
Applications -10°F (-23.3 °C)
and above
Air or Electric Defrost

60
Hz

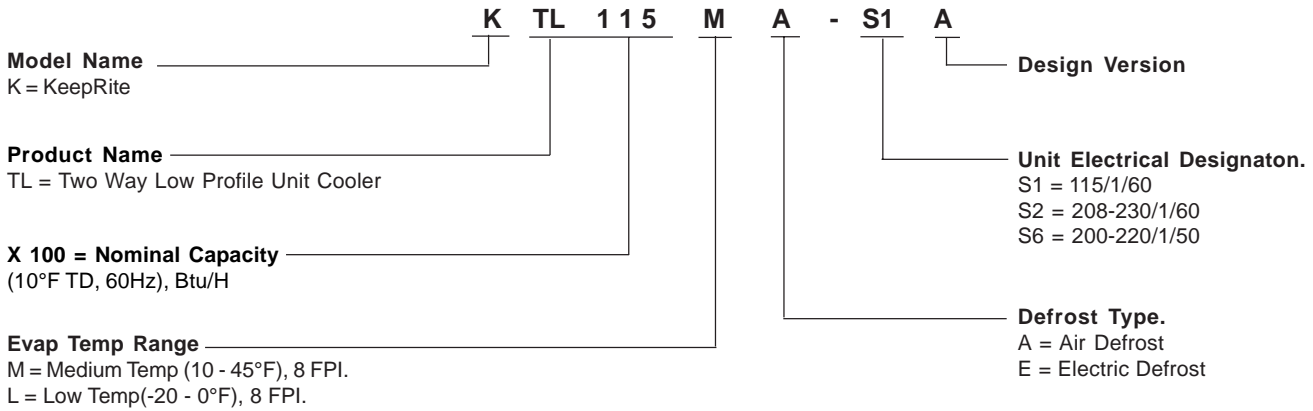
Electrical Power: 115/1/60,
208-230/1/60



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NOMENCLATURE



STANDARD FEATURES

- Low height compact size maximizes useable storage space
- Dual refrigeration coils and two-way air distribution reduces air velocities to minimize product dehydration.
- Air enters through fan and discharges two ways out of each coil side.
- Rugged heavy duty motor mount reduces vibration and noise.
- Electric defrost models include factory installed defrost termination and fan delay thermostat.
- NSF approved “flush to ceiling mount”
- Refrigerants R404A/R507 and R22.
- Internally enhanced tube

OPTIONAL FEATURES

- PSC Motors available on all models
- EC Motors available for Medium Temperature models 038, 060, 077 & 115 and Low Temperature models 033, 052, 066 & 099

MEDIUM TEMPERATURE MODELS - CAPACITY

		KTL010M	KTL015M	KTL020M	KTL025M	KTL032M	KTL038M	KTL060M	KTL077M	KTL115M
Number of Fans		1	1	1	1	1	1	2	2	3
Capacity		BTUH (watts)								
Evap Temp °F(°C)	+ 20/25 (-3.9/-6.7)	950 (278)	1450 (425)	2000 (586)	2500 (733)	3200 (938)	3800 (1114)	6000 (1758)	7700 (2257)	11500 (3370)
	15 (-9.4)	940 (275)	1430 (419)	1970 (577)	2460 (721)	3150 (923)	3740 (1096)	5910 (1732)	7580 (2221)	11330 (3320)
	10 (-12.2)	930 (273)	1420 (416)	1960 (574)	2450 (718)	3140 (920)	3720 (1090)	5880 (1723)	7550 (2213)	11270 (3303)
Air Flow CFM (L/s)		130 (61.4)	180 (85.0)	237 (112)	270 (127)	440 (208)	440 (208)	928 (438)	807 (381)	1242 (586)
Refrigerant Charge Lbs (Kg)		0.4 (0.18)	0.5 (0.23)	0.7 (0.32)	0.8 (0.36)	0.9 (0.41)	1.2 (0.55)	1.4 (0.64)	2.3 (1.05)	3.4 (1.55)

LOW TEMPERATURE MODELS - CAPACITY

		KTL009L	KTL013L	KTL017L	KTL021L	KTL028L	KTL033L	KTL052L	KTL066L	KTL099L
Number of Fans		1	1	1	1	1	1	2	2	3
Capacity		BTUH (watts)								
Evap Temp °F(°C)	0 (-17.8)	910 (267)	1340 (393)	1820 (533)	2250 (659)	3000 (879)	3530 (1035)	5560 (1629)	7060 (2069)	10590 (3104)
	-10 (-23.3)	880 (258)	1300 (381)	1770 (519)	2180 (639)	2910 (853)	3430 (1005)	5410 (1586)	6860 (2010)	10300 (3019)
	-15 (-26.1)	870 (255)	1280 (375)	1730 (507)	2140 (627)	2860 (838)	3370 (988)	5300 (1553)	6730 (1972)	10100 (2960)
	-20 (-28.9)	850 (249)	1250 (366)	1700 (498)	2100 (615)	2800 (821)	3300 (967)	5200 (1524)	6600 (1934)	9900 (2901)
Air Flow CFM (L/s)		130 (61.4)	180 (85.0)	237 (112)	270 (127)	440 (208)	440 (208)	928 (438)	807 (381)	1242 (586)
Refrigerant Charge Lbs (Kg)		0.4 (0.18)	0.5 (0.23)	0.7 (0.32)	0.8 (0.36)	0.9 (0.41)	1.2 (0.55)	1.4 (0.64)	2.3 (1.05)	3.4 (1.55)

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 15°F (4.4 to 8.3°C) are directly proportional to TD, or use formula

$$\text{CAPACITY} = (\text{RATED CAPACITY} / 10) \times \text{TD}$$

AIR DEFROST

MODEL	No. of FANS	FAN MOTOR(S) - SHADED POLE(STANDARD)				FAN MOTOR(S)- PSC (OPTIONAL)				FAN MOTOR(S)- EC (OPTIONAL)				DEFROST HEATERS			
		TOTAL MOTOR FLA	M.C.A.	M.O.P	WATTS	TOTAL MOTOR FLA	M.C.A.	M.O.P	WATTS	TOTAL MOTOR FLA	M.C.A.	M.O.P	WATTS	TOTAL WATTS	TOTAL AMPS	M.C.A.	M.O.P
KTL010MA-S1A	1	1.2	1.5	15	70	0.65	0.81	15	60	N/A	N/A	N/A	N/A	-	-	-	-
KTL015MA-S1A	1	1.2	1.5	15	70	0.65	0.81	15	60	N/A	N/A	N/A	N/A	-	-	-	-
KTL020MA-S1A	1	1.2	1.5	15	70	0.65	0.81	15	60	N/A	N/A	N/A	N/A	-	-	-	-
KTL025MA-S1A	1	1.2	1.5	15	70	0.65	0.81	15	60	N/A	N/A	N/A	N/A	-	-	-	-
KTL032MA-S1A	1	1.2	1.5	15	70	0.65	0.81	15	60	N/A	N/A	N/A	N/A	-	-	-	-
KTL038MA-S1A	1	1.2	1.5	15	70	0.65	0.81	15	60	0.40	0.50	15	30	-	-	-	-
KTL060MA-S1A	2	2.4	2.7	15	140	1.30	1.46	15	120	0.80	0.90	15	60	-	-	-	-
KTL077MA-S1A	2	2.4	2.7	15	140	1.30	1.46	15	120	0.80	0.90	15	60	-	-	-	-
KTL115MA-S1A	3	3.6	3.9	15	210	1.95	2.11	15	180	1.20	1.30	15	90	-	-	-	-

ELECTRIC DEFROST

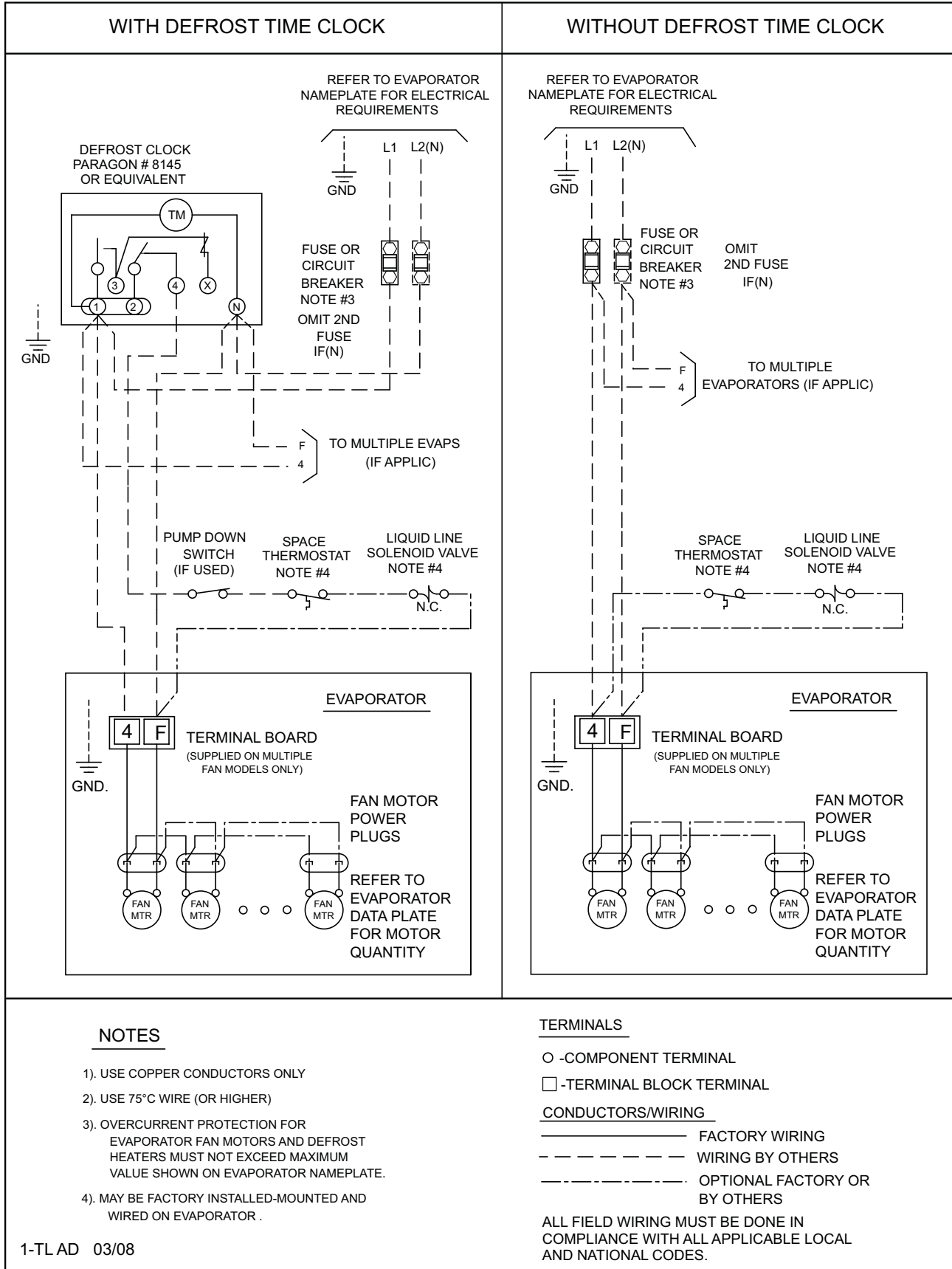
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		TOTAL MOTOR FLA	M.C.A.	M.O.P	WATTS	TOTAL MOTOR FLA	M.C.A.	M.O.P	WATTS	TOTAL MOTOR FLA	M.C.A.	M.O.P	WATTS	TOTAL WATTS	TOTAL AMPS	M.C.A.	M.O.P
KTL010ME-S1A	1	1.2	1.5	15	70	0.65	0.81	15	60	N/A	N/A	N/A	N/A	206	1.8	2.2	15
KTL015ME-S1A	1	1.2	1.5	15	70	0.65	0.81	15	60	N/A	N/A	N/A	N/A	530	4.6	5.8	15
KTL020ME-S1A	1	1.2	1.5	15	70	0.65	0.81	15	60	N/A	N/A	N/A	N/A	530	4.6	5.8	15
KTL025ME-S1A	1	1.2	1.5	15	70	0.65	0.81	15	60	N/A	N/A	N/A	N/A	530	4.6	5.8	15
KTL032ME-S1A	1	1.2	1.5	15	70	0.65	0.81	15	60	N/A	N/A	N/A	N/A	750	6.5	8.2	15
KTL038ME-S1A	1	1.2	1.5	15	70	0.65	0.81	15	60	0.40	0.50	15	30	750	6.5	8.2	15
KTL060ME-S1A	2	2.4	2.7	15	140	1.30	1.46	15	120	0.80	0.90	15	60	1100	9.6	12.0	15
KTL077ME-S1A	2	2.4	2.7	15	140	1.30	1.46	15	120	0.80	0.90	15	60	1540	13.4	16.8	20
KTL115ME-S1A	3	3.6	3.9	15	210	1.95	2.11	15	180	1.20	1.30	15	90	2270	19.7	24.6	25
KTL009LE-S1A	1	1.2	1.5	15	70	0.65	0.81	15	60	N/A	N/A	N/A	N/A	206	1.8	2.2	15
KTL013LE-S1A	1	1.2	1.5	15	70	0.65	0.81	15	60	N/A	N/A	N/A	N/A	530	4.6	5.8	15
KTL017LE-S1A	1	1.2	1.5	15	70	0.65	0.81	15	60	N/A	N/A	N/A	N/A	530	4.6	5.8	15
KTL021LE-S1A	1	1.2	1.5	15	70	0.65	0.81	15	60	N/A	N/A	N/A	N/A	530	4.6	5.8	15
KTL028LE-S1A	1	1.2	1.5	15	70	0.65	0.81	15	60	N/A	N/A	N/A	N/A	750	6.5	8.2	15
KTL033LE-S1A	1	1.2	1.5	15	70	0.65	0.81	15	60	0.40	0.50	15	30	750	6.5	8.2	15
KTL052LE-S1A	2	2.4	2.7	15	140	1.30	1.46	15	120	0.80	0.90	15	60	1100	9.6	12.0	15
KTL066LE-S1A	2	2.4	2.7	15	140	1.30	1.46	15	120	0.80	0.90	15	60	1540	13.4	16.8	20
KTL099LE-S1A	3	3.6	3.9	15	210	1.95	2.11	15	180	1.20	1.30	15	90	2270	19.7	24.6	25

AIR DEFROST

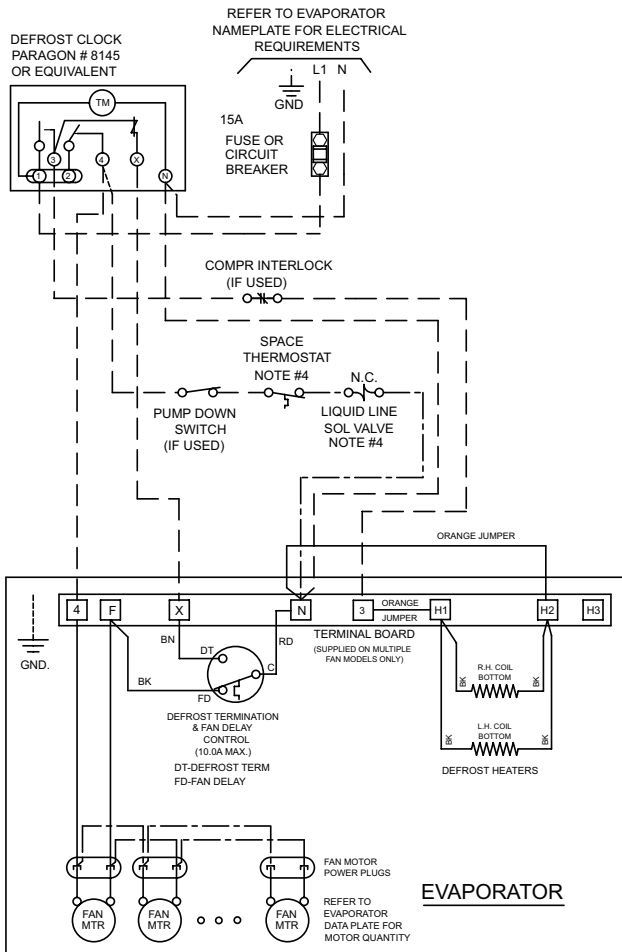
MODEL	No. of FANS	FAN MOTOR(S) - SHADED POLE(STANDARD)				FAN MOTOR(S)- PSC (OPTIONAL)				FAN MOTOR(S)- EC (OPTIONAL)				DEFROST HEATERS			
		TOTAL MOTOR FLA	M.C.A.	M.O.P	WATTS	TOTAL MOTOR FLA	M.C.A.	M.O.P	WATTS	TOTAL MOTOR FLA	M.C.A.	M.O.P	WATTS	TOTAL WATTS	TOTAL AMPS	M.C.A.	M.O.P
KTL010MA-S2A	1	0.7	0.9	15	60	0.24	0.30	15	50	N/A	N/A	N/A	N/A	-	-	-	-
KTL015MA-S2A	1	0.7	0.9	15	60	0.24	0.30	15	50	N/A	N/A	N/A	N/A	-	-	-	-
KTL020MA-S2A	1	0.7	0.9	15	60	0.24	0.30	15	50	N/A	N/A	N/A	N/A	-	-	-	-
KTL025MA-S2A	1	0.7	0.9	15	60	0.24	0.30	15	50	N/A	N/A	N/A	N/A	-	-	-	-
KTL032MA-S2A	1	0.7	0.9	15	60	0.24	0.30	15	50	N/A	N/A	N/A	N/A	-	-	-	-
KTL038MA-S2A	1	0.7	0.9	15	60	0.24	0.30	15	50	0.20	0.30	15	30	-	-	-	-
KTL060MA-S2A	2	1.4	1.6	15	120	0.48	0.54	15	100	0.40	0.50	15	60	-	-	-	-
KTL077MA-S2A	2	1.4	1.6	15	120	0.48	0.54	15	100	0.40	0.50	15	60	-	-	-	-
KTL115MA-S2A	3	2.1	2.3	15	180	0.72	0.78	15	150	0.60	0.70	15	90	-	-	-	-

ELECTRIC DEFROST

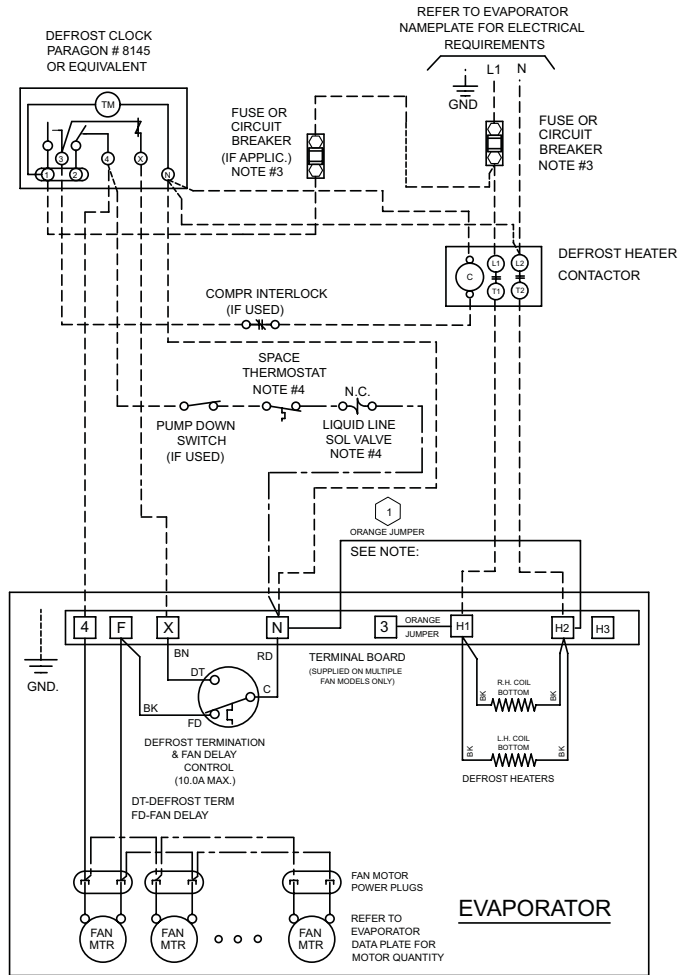
MODEL	No. of FANS	FAN MOTOR(S) - SHADED POLE(STANDARD)				FAN MOTOR(S)- PSC (OPTIONAL)				FAN MOTOR(S)- EC (OPTIONAL)				DEFROST HEATERS			
		TOTAL MOTOR FLA	M.C.A.	M.O.P	WATTS	TOTAL MOTOR FLA	M.C.A.	M.O.P	WATTS	TOTAL MOTOR FLA	M.C.A.	M.O.P	WATTS	TOTAL WATTS	TOTAL AMPS	M.C.A.	M.O.P
KTL010ME-S2A	1	0.7	0.9	15	60	0.24	0.30	15	50	-	-	-	-	206	0.9	1.1	15
KTL015ME-S2A	1	0.7	0.9	15	60	0.24	0.30	15	50	-	-	-	-	530	2.3	2.9	15
KTL020ME-S2A	1	0.7	0.9	15	60	0.24	0.30	15	50	-	-	-	-	530	2.3	2.9	15
KTL025ME-S2A	1	0.7	0.9	15	60	0.24	0.30	15	50	-	-	-	-	530	2.3	2.9	15
KTL032ME-S2A	1	0.7	0.9	15	60	0.24	0.30	15	50	-	-	-	-	750	3.3	4.1	15
KTL038ME-S2A	1	0.7	0.9	15	60	0.24	0.30	15	50	0.20	0.30	15	30	750	3.3	4.1	15
KTL060ME-S2A	2	1.4	1.6	15	120	0.48	0.54	15	100	0.40	0.50	15	60	1100	4.8	6.0	15
KTL077ME-S2A	2	1.4	1.6	15	120	0.48	0.54	15	100	0.40	0.50	15	60	1540	6.7	8.4	15
KTL115ME-S2A	3	2.1	2.3	15	180	0.72	0.78	15	150	0.60	0.70	15	90	2270	9.9	12.4	15
KTL009LE-S2A	1	0.7	0.9	15	60	0.24	0.30	15	50	-	-	-	-	206	0.9	1.1	15
KTL013LE-S2A	1	0.7	0.9	15	60	0.24	0.30	15	50	-	-	-	-	530	2.3	2.9	15
KTL017LE-S2A	1	0.7	0.9	15	60	0.24	0.30	15	50	-	-	-	-	530	2.3	2.9	15
KTL021LE-S2A	1	0.7	0.9	15	60	0.24	0.30	15	50	-	-	-	-	530	2.3	2.9	15
KTL028LE-S2A	1	0.7	0.9	15	60	0.24	0.30	15	50	-	-	-	-	750	3.3	4.1	15
KTL033LE-S2A	1	0.7	0.9	15	60	0.24	0.30	15	50	0.20	0.30	15	30	750	3.3	4.1	15
KTL052LE-S2A	2	1.4	1.6	15	120	0.48	0.54	15	100	0.40	0.50	15	60	1100	4.8	6.0	15
KTL066LE-S2A	2	1.4	1.6	15	120	0.48	0.54	15	100	0.40	0.50	15	60	1540	6.7	8.4	15
KTL099LE-S2A	3	2.1	2.3	15	180	0.72	0.78	15	150	0.60	0.70	15	90	2270	9.9	12.4	15



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



FOR ALL MODELS USING DEFROST HEATER CONTACTOR



WARNING

EVAP FIELD MODIFICATION
MUST BE MADE

SEE NOTE:



REMOVE ORANGE JUMPER FROM H2 TO N

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

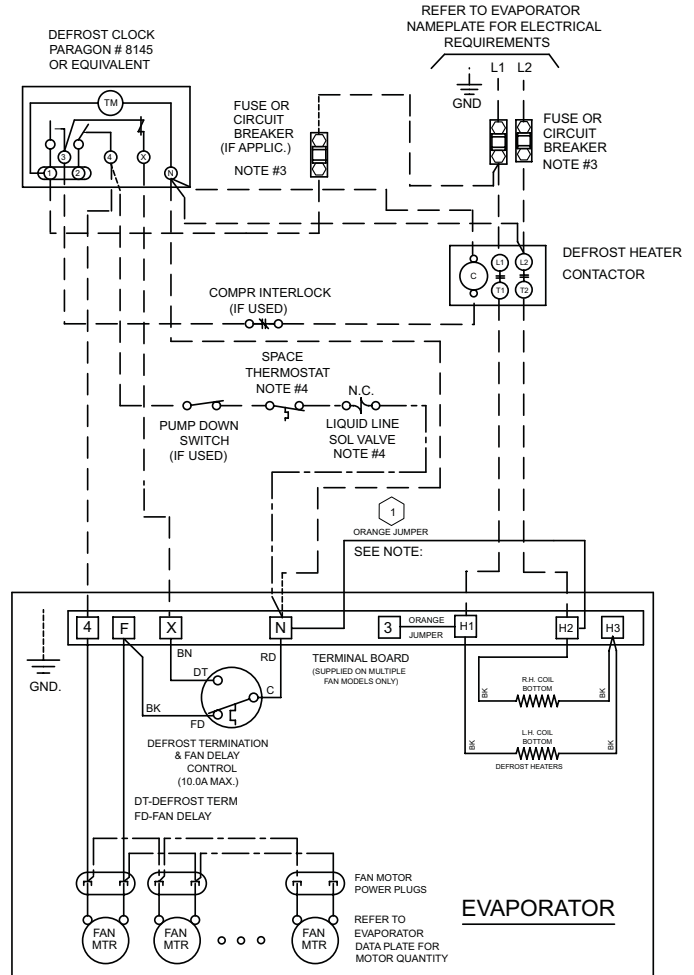
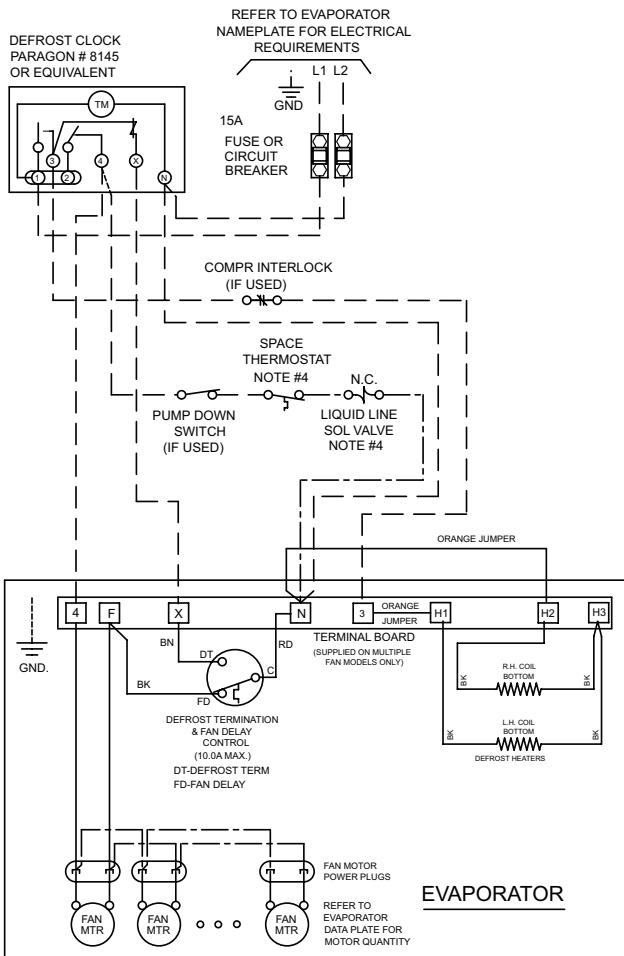
CONDUCTORS/WIRING

- 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.

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

FOR ALL MODELS USING DEFROST HEATER CONTACTOR



WARNING

EVAP FIELD MODIFICATION
MUST BE MADE

SEE NOTE:



REMOVE ORANGE JUMPER FROM H2 TO N

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

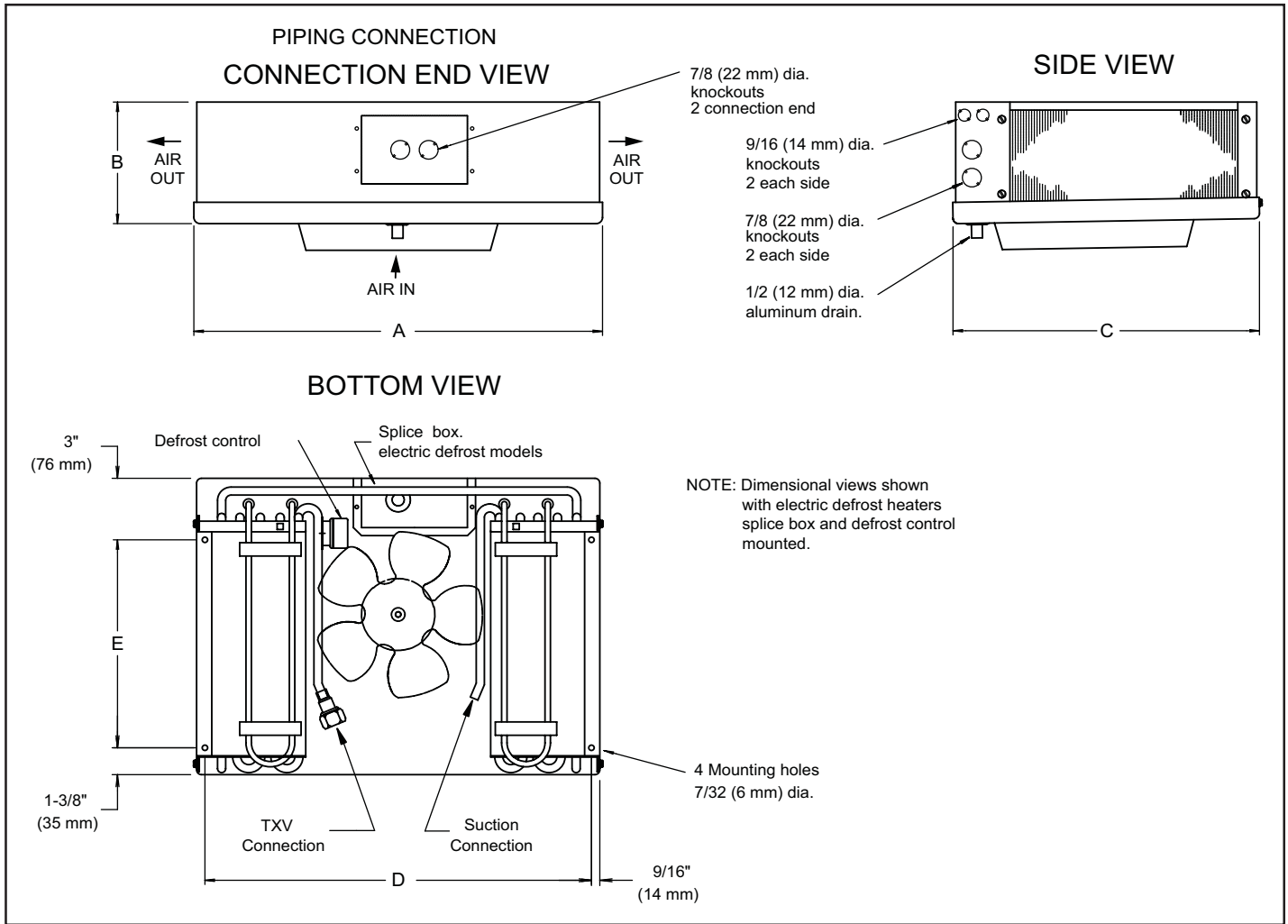
TERMINALS

- -COMPONENT TERMINAL
- -TERMINAL BLOCK TERMINAL

CONDUCTORS/WIRING

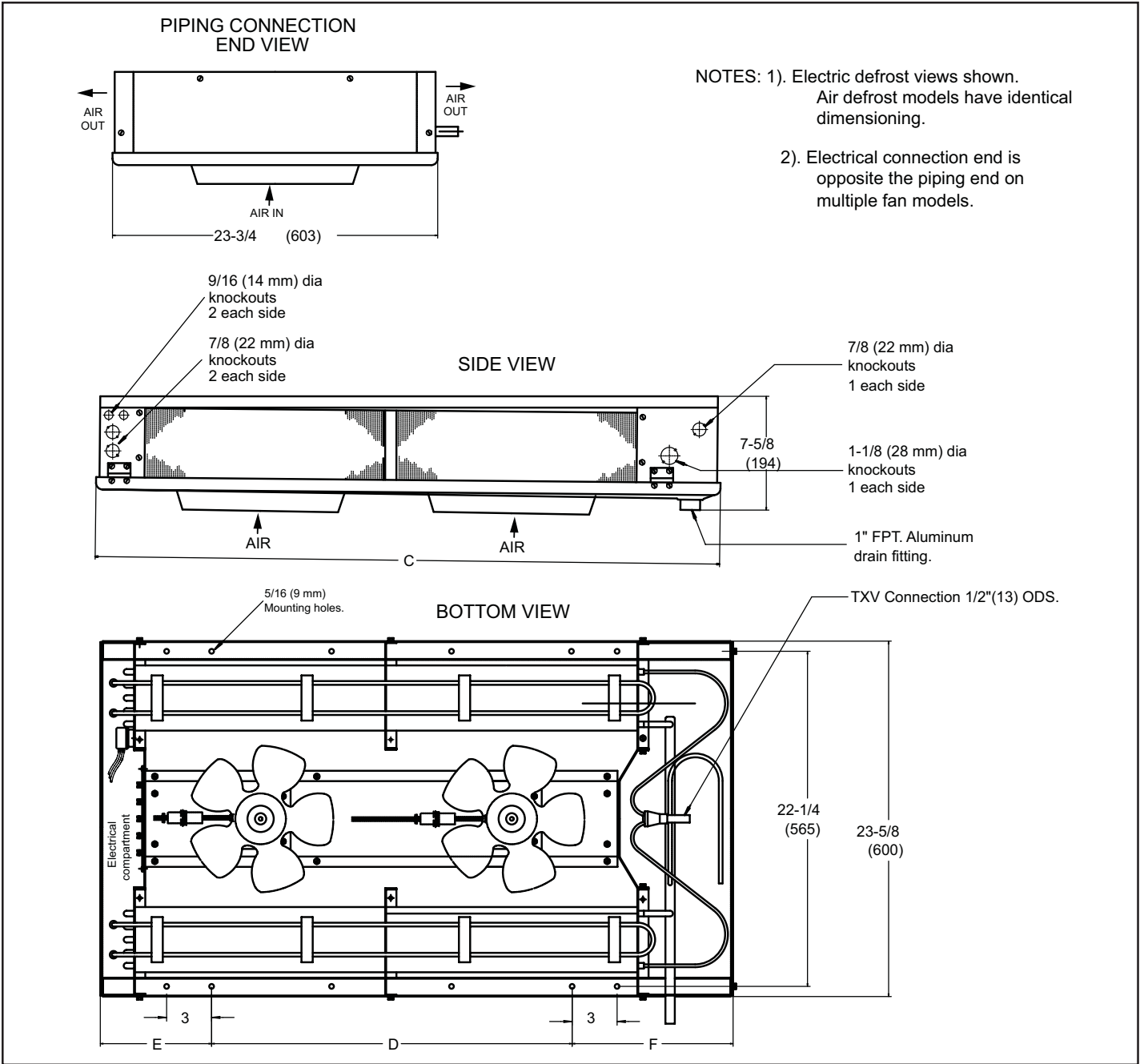
- FACTORY WIRING
- - - - - WIRING BY OTHERS
- - - - - OPTIONAL FACTORY OR BY OTHERS

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



MODEL	Suc. Conn.	TXV	A		B		C		D		E		APPROX. WEIGHT	
	(ID) Sweat	Inlet Size	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Lbs.	Kgs
KTL 010M*	3/8	1/2" Flare	18 7/8	479	4 1/2	114	14 1/8	359	17 3/4	451	9 3/4	248	11.6	5.3
KTL 015M*	3/8	1/2" Flare	18 7/8	479	4 1/2	114	14 1/8	359	17 3/4	451	9 3/4	248	12.6	5.7
KTL 020M*	3/8	1/2" Flare	18 7/8	479	5 1/2	140	14 1/8	359	17 3/4	451	9 3/4	248	13.7	6.2
KTL 025M*	3/8	1/2" Flare	18 7/8	479	5 1/2	140	14 1/8	359	17 3/4	451	9 3/4	248	14.7	6.7
KTL 032M*	3/8	1/2" ODS	21 7/8	556	5 1/2	140	19 1/8	486	20 3/4	527	14 3/4	375	18.9	8.6
KTL 038M*	3/8	1/2" ODS	21 7/8	556	5 1/2	140	19 1/8	486	20 3/4	527	14 3/4	375	20.0	9.1
KTL 009LE	3/8	1/2" Flare	18 7/8	479	4 1/2	114	14 1/8	359	17 3/4	451	9 3/4	248	11.6	5.3
KTL 013LE	3/8	1/2" Flare	18 7/8	479	4 1/2	114	14 1/8	359	17 3/4	451	9 3/4	248	12.6	5.7
KTL 017LE	3/8	1/2" ODS	18 7/8	479	5 1/2	140	14 1/8	359	17 3/4	451	9 3/4	248	13.7	6.2
KTL 021LE	3/8	1/2" ODS	18 7/8	479	5 1/2	140	14 1/8	359	17 3/4	451	9 3/4	248	14.7	6.7
KTL 028LE	1/2	1/2" ODS	21 7/8	556	5 1/2	140	19 1/8	486	20 3/4	527	14 3/4	375	18.9	8.6
KTL 033LE	1/2	1/2" ODS	21 7/8	556	5 1/2	140	19 1/8	486	20 3/4	527	14 3/4	375	20.0	9.1

* - A (AIR DEFROST) OR E (ELECTRIC DEFROST)



MODEL	Suc. Conn.	TXV	C		D		E		F		APPROX. WEIGHT	
	(ID) Sweat	Inlet Size	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Lbs.	Kgs
KTL 060M	1/2	1/2" ODS	42 3/4	1086	4 holes @ 8"	203	7 11/16	195	10 15/16	278	37.8	17.1
KTL 077M	5/8	1/2" ODS	42 3/4	1086	4 holes @ 8"	203	7 11/16	195	10 15/16	278	39.9	18.1
KTL 115M	5/8	1/2" ODS	59 1/2	1511	6 holes @ 8"	203	8	203	11 7/16	291	59.9	27.2
KTL 052LE	5/8	1/2" ODS	42 3/4	1086	4 holes @ 8"	203	7 11/16	195	10 15/16	278	37.8	17.1
KTL 066LE	5/8	1/2" ODS	42 3/4	1086	4 holes @ 8"	203	7 11/16	195	10 15/16	278	39.9	18.1
KTL 099LE	7/8	1/2" ODS	59 1/2	1511	6 holes @ 8"	203	8	203	11 7/16	291	59.9	27.2

Nozzle Selections (Factory installed) For all applications and refrigerants

Model	Nozzle
KTL010MA/ME	NA
KTL015MA/ME	NA
KTL020MA/ME	NA
KTL025MA/ME	NA
KTL032MA/ME	L-1/4
KTL038MA/ME	L-1/3
KTL060MA/ME	L-1/2
KTL077MA/ME	L-3/4
KTL115MA/ME	L-1

Model	Nozzle
KTL009LE	NA
KTL013LE	NA
KTL017LE	L-1/4
KTL021LE	L-1/3
KTL028LE	L-1/2
KTL033LE	L-1/2
KTL052LE	L-1
KTL066LE	L-1
KTL099LE	L-1 1/2

MEDIUM TEMP - EXPANSION VALVE SELECTION

SPORLAN

MODEL	TD	CAPACITY @ 25°F SST	R404A	R22
KTL010M	10	950	GS-1/8-C	GV-1/5-C
	15	1,425		
KTL015M	10	1,450	GS-1/8-C	GV-1/5-C
	15	2,175		
KTL020M	10	2,000	GS-1/8-C	GV-1/5-C
	15	3,000	GS-1/6-C	
KTL025M	10	2,500	GS-1/6-C	GV-1/5-C
	15	3,750		GV-1/3-C
KTL032M	10	3,200	EGSE-1/4-C	EGVE-1/3-C
	15	4,800	EGSE-1/2-C	EGVE-1/2-C
KTL038M	10	3,800	EGSE-1/4-C	EGVE-1/3-C
	15	5,700	EGSE-1/2-C	EGVE-1/2-C
KTL060M	10	6,000	EGSE-1/2-C	EGVE-3/4-C
	15	9,000	EGSE-1-C	
KTL077M	10	7,700	EGSE-1/2-C	EGVE-3/4-C
	15	11,550	EGSE-1-C	EGVE-1-C
KTL115M	10	11,500	EGSE-1-C	EGVE-1-C
	15	17,250	EGSE-1 1/2-C	EGVE-1 1/2-C

DANFOSS

MODEL	TD	CAPACITY @ 25°F SST	R404A	R22
KTL010M	10	950	TUA-R404A-0-N	TUA-R22-0-N
	15	1,425	TUA-R404A-1-N	
KTL015M	10	1,450	TUA-R404A-1-N	TUA-R22-0-N
	15	2,175	TUA-R404A-2-N	TUA-R22-1-N
KTL020M	10	2,000	TUA-R404A-2-N	TUA-R22-1-N
	15	3,000	TUAE-R404A-3-N	TUAE-R22-2-N
KTL025M	10	2,500	TUA-R404A-2-N	TUA-R22-1-N
	15	3,750	TUAE-R404A-3-N	TUAE-R22-2-N
KTL032M	10	3,200	TUAE-R404A-3-N	TUAE-R22-2-N
	15	4,800	TUAE-R404A-4-N	TUAE-R22-3-N
KTL038M	10	3,800	TUAE-R404A-3-N	TUAE-R22-3-N
	15	5,700	TUAE-R404A-4-N	TUAE-R22-4-N
KTL060M	10	6,000	TUAE-R404A-5-N	TUAE-R22-4-N
	15	9,000	TUAE-R404A-6-N	TUAE-R22-5-N
KTL077M	10	7,700	TUAE-R404A-5-N	TUAE-R22-5-N
	15	11,550	TUAE-R404A-6-N	TUAE-R22-6-N
KTL115M	10	11,500	TUAE-R404A-6-N	TUAE-R22-6-N
	15	17,250	TUAE-R404A-8-N	TUAE-R22-7-N

For medium temp. R-507, refrigerant designation changes from 'S' to 'P'.

ALCO

MODEL	TD	CAPACITY @ 25°F SST	R404A	R22
KTL010M	10	950	HF-1/8-SC	HF-1/4-HC
	15	1,425		
KTL015M	10	1,450	HF-1/8-SC	HF-1/4-HC
	15	2,175		
KTL020M	10	2,000	HF-1/8-SC	GS-1/8-C
	15	3,000	HF-1/4-SC	GS-1/6-C
KTL025M	10	2,500	HF-1/4-SC	GS-1/6-C
	15	3,750		
KTL032M	10	3,200	HFESC-1/4-SC	HFESC-1/4-HC
	15	4,800	HFESC-1/2-SC	HFESC-1/2-HC
KTL038M	10	3,800	HFESC-1/4-SC	HFESC-1/2-HC
	15	5,700	HFESC-1/2-SC	
KTL060M	10	6,000	HFESC-1/2-SC	HFESC-1/2-HC
	15	9,000	HFESC-1-SC	HFESC-1-HC
KTL077M	10	7,700	HFESC-1/2-SC	HFESC-1-HC
	15	11,550	HFESC-1-SC	
KTL115M	10	11,500	HFESC-1-SC	HFESC-1-HC
	15	17,250	HFESC-1 1/4-SC	HFESC-1 1/2-HC

ALL TXV Selections based on 90-100F liquid.

SPORLAN

R404A		KTL009L		KTL013L		KTL017L		KTL021L		KTL028L	
		BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #
EVAP TEMP. °F	0	910	GS-1/8-C	1,340	GS-1/8-C	1,820	EGSE-1/8-C	2,250	EGSE-1/6-C	3,000	EGSE-1/4-C
	-10	880	GS-1/8-Z	1,300	GS-1/8-Z	1,770	EGSE-1/6-Z	2,180	EGSE-1/6-Z	2,910	EGSE-1/4-Z
	-15	870		1,280		1,730		2,140		2,860	
	-20	850		1,250		1,700		2,100		2,800	
		KTL033L		KTL052L		KTL066L		KTL099L			
		BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #		
EVAP TEMP. °F	0	3,530	EGSE-1/4-C	5,560	EGSE-1/2-C	7,060	EGSE-1/2-C	10,590	EGSE-1-C		
	-10	3,430	EGSE-1/4-Z	5,410	EGSE-1/2-Z	6,860	EGSE-1-Z	10,300	EGSE-1-Z		
	-15	3,370		5,300		6,730		10,100			
	-20	3,300		5,200		6,600		9,900			

For medium temp. R-507, refrigerant designation changes from 'S' to 'P'.

For R404A/R507 valves operating below 0F, the pressure limiting charge 'ZP' may be substituted for the 'Z' charge.

ALCO

R404A		KTL009L		KTL013L		KTL017L		KTL021L		KTL028L	
		BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #
EVAP TEMP. °F	0	910	HF-1/8-SC	1,340	HF-1/8-SC	1,820	HFESC-1/8-SC	2,250	HFESC-1/8-SC	3,000	HFESC-1/4-SC
	-10	880	HF-1/8-SW45	1,300	HF-1/8-SW45	1,770	HFESC-1/4-SW45	2,180	HFESC-1/4-SW45	2,910	HFESC-1/4-SW45
	-15	870		1,280		1,730		2,140		2,860	
	-20	850		1,250		1,700		2,100		2,800	
		KTL033L		KTL052L		KTL066L		KTL099L			
		BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #		
EVAP TEMP. °F	0	3,530	HFESC-1/4-SC	5,560	HFESC-1/2-SC	7,060	HFESC-1/2-SC	10,590	HFESC-1-SC		
	-10	3,430	HFESC-1/2-SW45	5,410	HFESC-1/2-SW45	6,860	HFESC-1-SW45	10,300	HFESC-1 1/4-SW45		
	-15	3,370		5,300		6,730		10,100			
	-20	3,300		5,200		6,600		9,900			

For medium temp. R-507, refrigerant designation changes from 'S' to 'P'.

DANFOSS

R404A		KTL009L		KTL013L		KTL017L		KTL021L		KTL028L	
		BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #
EVAP TEMP. °F	0	910	TUA-R404A-0-N	1,340	TUA-R404A-1-N	1,820	TUAE-R404A-2-N	2,250	TUA-R404A-3-N	3,000	TUAE-R404A-4-N
	-10	880	TUA-R404A-0-NM	1,300	TUA-R404A-2-NM	1,770	TUAE-R404A-3-NM	2,180	TUAE-R404A-4-NM	2,910	TUAE-R404A-5-NM
	-15	870		1,280		1,730		2,140		2,860	
	-20	850		1,250		1,700		2,100		2,800	
		KTL033L		KTL052L		KTL066L		KTL099L			
		BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #	BTUH	VALVE #		
EVAP TEMP. °F	0	3,530	TUAE-R404A-4-N	5,560	TUAE-R404A-5-N	7,060	TUAE-R404A-6-N	10,590	TUAE-R404A-7-N		
	-10	3,430	TUAE-R404A-5-NM	5,410	TUAE-R404A-6-NM	6,860	TUAE-R404A-7-NM	10,300	TUAE-R404A-8-NM		
	-15	3,370		5,300		6,730		10,100			
	-20	3,300		5,200		6,600		9,900			

All TXV Selections based on 90-100F liquid.

INSTALLATION INSTRUCTIONS

INSPECTION

Careful inspection of all parts when received for loss or damage in transit is very 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.

Electrical characteristics should also be checked at this time to ensure that they are as ordered.

APPLICATION

Two-Way Unit Coolers are designed for use in coolers and freezers such as reach in boxes, display cases, back bars, walk-in rooms and any other cooler applications where a low velocity, uniform air flow is required. The compact and low height unit provides maximum useable product storage space.

At room temperatures above 34 °F (**1.1 °C**) and evaporating temperatures no lower than 27 °F (**-2.8 °C**) the air flowing through the coil will accomplish the defrost (Air Defrost).

At room temperatures 34 °F and below (to -10 °F) positive defrosting is required (Electric defrost) . These will require the use of :

1. *Time Clock* (to initiate and terminate the defrost cycle) ,
2. *Defrost termination thermostat* (to prevent unnecessary prolonged heating and steaming of the coil once all the frost and ice has melted). And if a freezer,
3. *Fan delay thermostat* (to prevent evaporator fans starting up right away and blowing water on to the fan blades, guards and floor).

This evaporator coil must not be exposed to any abnormal environments (acidic or caustic) that can result in coil corrosion and leaks. Consult factory for optional baked on phenolic protective coatings. These unit coolers are for use primarily on R22 and R404A refrigerants and their approved alternatives / replacements.

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.

LOCATION

The Unit Cooler is designed to be mounted to the ceiling of the box or cabinet. Refrigeration piping and electrical connections are routed to the rear sides (through the knock-outs). The unit must be mounted to a level ceiling to ensure complete drainage from the condensate pan to the drain fitting. Refer to the dimensional drawings for the drain fitting and mounting location details.

On freezer applications it is important that warm, humid infiltrated air is ***not drawn directly towards the unit cooler***. Keeping the unit cooler away from the door, using strip curtains, and using door switches to lock out and de-energize the liquid solenoid valve are all effective methods to minimize any unnecessary frost build -up of the fan guard. (Air enters the fan and discharges out each side of the coil).

TXV (thermostatic expansion valve) SELECTION

For normal operating conditions refer to the TXV selection chart. When selecting valves ensure they are sized to meet the capacity at the actual evaporating temperature, liquid temperature and operating TD of the system . All these conditions can greatly affect the size and selection. Consult the factory or valve manufacturer for assistance. All models that use a distributor (larger models) must use a nozzle. Smaller models do not have distributors or nozzles.

INSTALLATION INSTRUCTIONS (CONT'D)

The TXV superheat setting should NOT be initially adjusted . After the room has reached or is close to the required operating temperature the TXV superheat should then be checked and only adjusted if necessary. Refer to Section on SYSTEM CHECK.

To avoid overheating the valve or distributor wrap a wet cloth around the valve diaphragm and body.

MOUNTING

Mounting brackets with 7/32 - 5/16" diameter holes are provided for flush mounting to the ceiling. Ensure the evaporator is located correctly with the air flowing in the two desired directions. Avoid discharging the air directly on to glass doors or door openings.

After mounting the coil ***check the slope*** of the drain pan with a level. If the ceiling is not level the drain pan slope may not be correct which can result in defrosting (ice-up) problems.

DRAIN LINE

The drain line should be run from the drain connection, sloping at least 4" vertical drop for every foot of horizontal distance . A trap outside the room will allow proper draining throughout the line. Connection should be made to proper drainage facilities that comply with local codes and regulations.

In freezers, to prevent drain line freeze up problems, the line must be heated and insulated. A heat input of 20 W per foot in a 0 °F room and 30 W per foot in a -20 °F room is usually satisfactory. Once the line has been completed , double check the slope in the drain pan to ensure proper drainage (prevention of ice build-up on pan).

PIPING

Refrigerant line sizes are important and are not necessarily the same size as the connections at the condensing unit or evaporator. If in doubt refer to a recognized source. (Manufacturer's Engineering Manual, Ashrae Manuals, etc.)

WIRING

Wire system in accordance with local codes and regulations. A 36" cord is provided for single fan air defrost models (AD) .Multiple fans have a junction terminal box for conduit connections.

When Fan delay thermostats are installed the fans may not start up until the coil temperature reaches approximately 26 °F . On initial start up it may be necessary to bypass (jumper) this control temporarily until the coil is cold enough.

SYSTEM CHECK

Before Start Up:

1. Ensure wiring is in accordance with codes.
2. Refrigerant lines are properly sized and routed.
3. Thorough leak check, evacuation and dehydration has been performed.
4. Drain line has been checked for free flow.

After Start Up:

1. Fan has been checked for correct air flow and no obstructions.
2. Expansion valve superheat has been checked for proper operation. (Superheat of the coil should be around 5 to 6 °F for a 10 °F TD.)

MAINTENANCE

The unit should be periodically inspected for any dirt or build up on the fin surface and cleaned if necessary with a soft whisk or brush.

The fan motor is permanently lubricated and should not require service.

MODEL NUMBER		FAN GUARD	SHADED POLE MOTORS			PSC MOTORS			EC MOTORS		
MEDIUM TEMP	LOW TEMP		FAN MOTOR		FAN BLADE	FAN MOTOR		FAN BLADE	FAN MOTOR		FAN BLADE
			115/1/60	208-230/1/60		115/1/60	208-230/1/60		115/1/60	208-230/1/60	
KTL010M	KTL009L	1043293	1088581	1088582	1043870-001	1088583	1088584	1043870-002	N/A	N/A	N/A
KTL015M	KTL013L	1043293	1088581	1088582	1043870-002	1088583	1088584	1043870-002	N/A	N/A	N/A
KTL020M	KTL017L	1043293	1088581	1088582	1043870-003	1088583	1088584	1043870-003	N/A	N/A	N/A
KTL025M	KTL021L	1043293	1088581	1088582	1043870-004	1088583	1088584	1043870-004	N/A	N/A	N/A
KTL032M	KTL028L	1043294	1088581	1088582	1043870-005	1088583	1088584	1043870-005	N/A	N/A	N/A
KTL038M	KTL033L	1043294	1088581	1088582	1043870-005	1088583	1088584	1043870-005	1088459	1088460	1043870-005
KTL060M	KTL052L	1043294	1088581	1088582	1043870-005	1088583	1088584	1043870-005	1088459	1088460	1043870-005
KTL077M	KTL066L	1043294	1088581	1088582	1043870-005	1088583	1088584	1043870-005	1088459	1088460	1043870-005
KTL115M	KTL099L	1043294	1088581	1088582	1043870-006	1088583	1088584	1043870-006	1088459	1088460	1043870-006

MODEL NUMBER		DEFROST HEATERS* (ME & LE models only)	DRAIN PAN ASSEMBLY	TERMINAL BOARD		ELECTRIC DEFROST FAN DELAY / DEFROST TERMINATION CONTROL
MEDIUM TEMP	LOW TEMP			AIR DEFROST	ELECTRIC DEFROST	
KTL010M	KTL009L	1070468-001	1043868-001	N/A	N/A	1043725
KTL015M	KTL013L	1069861-001	1043868-001	N/A	N/A	1043725
KTL020M	KTL017L	1069861-001	1043868-001	N/A	N/A	1043725
KTL025M	KTL021L	1069861-001	1043868-001	N/A	N/A	1043725
KTL032M	KTL028L	1069861-002	1043869-001	N/A	N/A	1043725
KTL038M	KTL033L	1069861-002	1043869-001	N/A	N/A	1043725
KTL060M	KTL052L	1070468-002	1070010-001	1048825	1070060	1043725
KTL077M	KTL066L	1069861-003	1070010-001	1048825	1070060	1043725
KTL115M	KTL099L	1069861-004	1070011-001	1048825	1070060	1043725

* All heaters are rated at 115V - either wired in series (for 230V) or parallel (for 115V)

NOTES

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NOTES

FINISHED GOODS WARRANTY

The terms and conditions as described below in the General Warranty Policy cover all products manufactured by National Refrigeration.

GENERAL WARRANTY POLICY

Subject to the terms and conditions hereof, the Company warrants all Products, including Service Parts, manufactured by the Company to be free of defects in material or workmanship, under normal use and application for a period of one (1) year from the original date of installation, or eighteen (18) months from the date of shipment from the Company, whichever occurs first. Any replacement part(s) so supplied will be warranted for the balance of the product's original warranty. The part(s) to be replaced must be made available in exchange for the replacement part(s) and reasonable proof of the original installation date of the product must be presented in order to establish the effective date of the warranty, failing which, the effective date will be based upon the date of manufacture plus thirty (30) days. Any labour, material, refrigerant, transportation, freight or other charges incurred in connection with the performance of this warranty will be the responsibility of the owner at the current rates and prices then in effect. This warranty may be transferred to a subsequent owner of the product.

THIS WARRANTY DOES NOT COVER

(a) Damages caused by accident, abuse, negligence, misuse, riot, fire, flood, or Acts of God (b) damages caused by operating the product in a corrosive atmosphere (c) damages caused by any unauthorized alteration or repair of the system affecting the product's reliability or performance (d) damages caused by improper matching or application of the product or the product's components (e) damages caused by failing to provide routine and proper maintenance or service to the product (f) expenses incurred for the erecting, disconnecting, or dismantling the product (g) parts used in connection with normal maintenance, such as filters or belts (h) products no longer at the site of the original installation (i) products installed or operated other than in accordance with the printed instructions, with the local installation or building codes and with good trade practices (j) products lost or stolen.

No one is authorized to change this WARRANTY or to create for or on behalf of the Company any other obligation or liability in connection with the Product(s). There is no other representation, warranty or condition in any respect, expressed or implied, made by or binding upon the Company other than the above or as provided by provincial or state law and which cannot be limited or excluded by such law, nor will we be liable in any way for incidental, consequential, or special damages however caused.

The provisions of this additional written warranty are in addition to and not a modification of or subtraction from the statutory warranties and other rights and remedies provided by Federal, Provincial or State laws.

PROJECT INFORMATION

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

“AS BUILT” SERVICE PARTS LIST

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



**NATIONAL REFRIGERATION &
AIR CONDITIONING CANADA CORP.**



CANADA

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