NOTE: Models in this document are not certified to DOE/NRCAN efficiency standards and should not be used for coolers or freezers less than 3000 sq.ft.

TTM LEGACY MODELS
Two-Way Medium Profile Evaporators

PRODUCT DATA & INSTALLATION

Bulletin T30-TTM-PDI-13
Part # 1087841

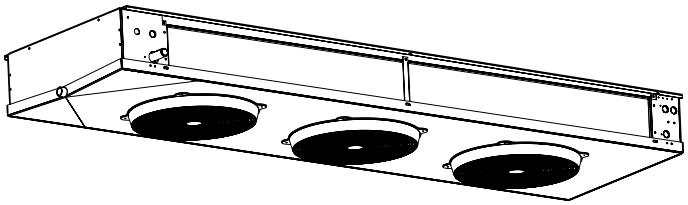
PRODUCT SUPPORT
web: **www.t-rp.com/ttm**
email: **evaps@t-rp.com**
call: **1-844-893-3222 x520**
scan:

High, Medium and Low Temperature Applications -10°F (*-23.3 °C*) or Above Box Temperature

60 Hz

Air, Electric or Hot Gas Defrost (Reverse Cycle)

INCLUDES MODELS FOR DOE & NRCAN
AWEF-EXEMPT APPLICATIONS



INCLUDES RATINGS FOR LOW GWP REFRIGERANTS

ESP+
see page 11 for details

CONTENTS

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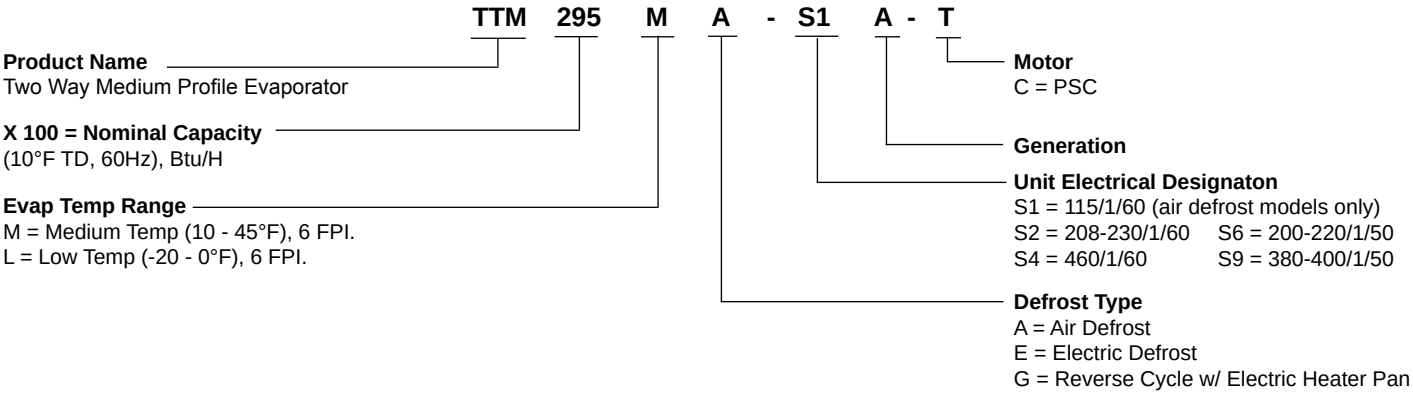
NOMENCLATURE



STANDARD FEATURES

- Compatible with Low GWP Refrigerants
- Heavy gauge textured aluminum cabinet construction resists scratches/corrosion and minimizes weight for shipment, installation and service.
- Capacity up to 29,500 BTUH nominal @ 10F TD.
- Dual refrigeration coils with two-way air distribution reduces air velocities to minimize product dehydration.
- Air enters through fan and discharges two ways out of each coil side.
- Low height compact size usable storage space.
- Internally enhanced tube.
- Attractive and durable high - density polyethylene fan guards.
- Standard PSC motors
- Hinged drain pan provides convenient access for cleaning.
- Terminal board allows for easy electrical connections.
- Reduced operating charge with 3/8” OD tubing

AVAILABLE OPTIONS

- Factory mounted solenoid valve, TXV and Thermostat on air and electric defrost models.
- **ESP+ Intuitive Evaporator Control Technology.** See page 11
- Corrosion protection: alternate fin materials and coatings
- Additional options available, please consult factory.

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TTM CAPACITY DATA - ALL MODELS 60Hz

MEDIUM TEMPERATURE MODELS - CAPACITY

Model TTM			115M	139M	172M	208M	236M	260M	295M
Number of Fans			2	2	3	3	4	4	5
Capacity BTUH *(WATTS)*	Evap Temp. 25°F *(-4°C)*	R407A R448A	10930 *(3202)*	13210 *(3870)*	16340 *(4789)*	19760 *(5791)*	22420 *(6570)*	24700 *(7239)*	28000 *(8214)*
		R407C	10350 *(3033)*	12510 *(3667)*	15480 *(4537)*	18720 *(5486)*	21240 *(6224)*	23400 *(6858)*	26600 *(7781)*
		R404A R507	11500 *(3370)*	13900 *(4074)*	17200 *(5041)*	20800 *(6096)*	23600 *(6916)*	26000 *(7620)*	29500 *(8646)*
		R22	10930 *(3202)*	13210 *(3870)*	16340 *(4789)*	19760 *(5791)*	22400 *(6570)*	24700 *(7239)*	28000 *(8214)*
		R134a	10350 *(3033)*	12510 *(3667)*	15480 *(4537)*	18720 *(5486)*	21240 *(6224)*	23400 *(6858)*	26550 *(7781)*
Air Flow	CFM *(L/s)*		2020 *(953)*	1900 *(897)*	3030 *(1430)*	2850 *(1345)*	3700 *(1746)*	3780 *(1784)*	4630 *(2185)*
Refrigerant ** Charge R407A	Lbs *(Kg)*		2.3 *(1.0)*	3.1 *(1.4)*	3.4 *(1.5)*	4.6 *(2.1)*	4.6 *(2.1)*	5.7 *(2.6)*	5.7 *(2.6)*

LOW TEMPERATURE MODELS - CAPACITY *

Models			105L	124L	153L	188L	210L	235L	265L
Number of Fan TTM			2	2	3	3	4	4	5
Capacity BTUH *(WATTS)*	Evap Temp. -20°F *(-28.9°C)*	R407A R448A	9980 *(2923)*	11780 *(3452)*	14540 *(4260)*	17860 *(5235)*	19950 *(5846)*	22300 *(6543)*	25200 *(7378)*
		R407C	9450 *(2769)*	11160 *(3271)*	13770 *(4036)*	16920 *(4959)*	18900 *(5539)*	21150 *(6198)*	23900 *(6989)*
		R404A R507	10500 *(3077)*	12400 *(3634)*	15300 *(4484)*	18800 *(5510)*	21000 *(6154)*	23500 *(6887)*	26500 *(7766)*
		R22	9980 *(2923)*	11780 *(3452)*	14540 *(4260)*	17860 *(5235)*	20000 *(5846)*	22300 *(6543)*	25200 *(7378)*
		R134a	9450 *(2769)*	11160 *(3271)*	13770 *(4036)*	16920 *(4959)*	18900 *(5539)*	21150 *(6198)*	23850 *(6989)*
Air Flow	CFM *(L/s)*		2020 *(953)*	1900 *(897)*	3030 *(1430)*	2850 *(1345)*	3700 *(1746)*	3780 *(1784)*	4630 *(2185)*
Refrigerant ** Charge R407A	Lbs *(Kg)*		2.3 *(1.0)*	3.1 *(1.4)*	3.4 *(1.5)*	4.6 *(2.1)*	4.6 *(2.1)*	5.7 *(2.6)*	5.7 *(2.6)*

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)*
FACTOR	1.06	1.03	1.0

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

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TTM

ELECTRICAL DATA

60Hz

AIR DEFROST

MODEL TTM	No. of FANS	POWER SUPPLY	FAN MOTOR(S) PSC-Standard			
			TOTAL MOTOR FLA	M.C.A.	WATTS	M.O.P
115MA-S1	2	115/1/60	2.2	2.5	200	15
139MA-S1	2	115/1/60	2.2	2.5	200	15
172MA-S1	3	115/1/60	3.3	3.6	300	15
208MA-S1	3	115/1/60	3.3	3.6	300	15
236MA-S1	4	115/1/60	4.4	4.7	400	15
260MA-S1	4	115/1/60	4.4	4.7	400	15
295MA-S1	5	115/1/60	5.5	5.8	500	15
115MA-S2	2	208-230/1/60	1.0	1.1	200	15
139MA-S2	2	208-230/1/60	1.0	1.1	200	15
172MA-S2	3	208-230/1/60	1.5	1.6	300	15
208MA-S2	3	208-230/1/60	1.5	1.6	300	15
236MA-S2	4	208-230/1/60	2.0	2.1	400	15
260MA-S2	4	208-230/1/60	2.0	2.1	400	15
295MA-S2	5	208-230/1/60	2.5	2.6	500	15
115MA-S4	2	460/1/60	0.6	0.7	200	15
139MA-S4	2	460/1/60	0.6	0.7	200	15
172MA-S4	3	460/1/60	0.9	1.0	300	15
208MA-S4	3	460/1/60	0.9	1.0	300	15
236MA-S4	4	460/1/60	1.2	1.3	400	15
260MA-S4	4	460/1/60	1.2	1.3	400	15
295MA-S4	5	460/1/60	1.5	1.6	500	15

ELECTRIC DEFROST

MODEL TTM	No. of FANS	POWER SUPPLY	FAN MOTOR(S) PSC-Standard				DEFROST HEATERS				
			TOTAL MOTOR FLA	M.C.A.	WATTS	M.O.P	POWER SUPPLY	TOTAL WATTS	TOTAL AMPS	M.C.A.	M.O.P
115ME-S2	2	208-230/1/60	1.0	1.1	200	15	208-230/1/60	2600	11.3	14.1	15
139ME-S2	2	208-230/1/60	1.0	1.1	200	15	208-230/1/60	2600	11.3	14.1	15
172ME-S2	3	208-230/1/60	1.5	1.6	300	15	208-230/1/60	3720	16.2	20.3	25
208ME-S2	3	208-230/1/60	1.5	1.6	300	15	208-230/1/60	3720	16.2	20.3	25
236ME-S2	4	208-230/1/60	2.0	2.1	400	15	208-230/1/60	3720	16.2	20.3	25
260ME-S2	4	208-230/1/60	2.0	2.1	400	15	208-230/1/60	4560	19.8	24.8	25
295ME-S2	5	208-230/1/60	2.5	2.6	500	15	208-230/1/60	4560	19.8	24.8	25
105LE-S2	2	208-230/1/60	1.0	1.1	200	15	208-230/1/60	2600	11.3	14.1	15
124LE-S2	2	208-230/1/60	1.0	1.1	200	15	208-230/1/60	2600	11.3	14.1	15
153LE-S2	3	208-230/1/60	1.5	1.6	300	15	208-230/1/60	3720	16.2	20.3	25
188LE-S2	3	208-230/1/60	1.5	1.6	300	15	208-230/1/60	3720	16.2	20.3	25
210LE-S2	4	208-230/1/60	2.0	2.1	400	15	208-230/1/60	3720	16.2	20.3	25
235LE-S2	4	208-230/1/60	2.0	2.1	400	15	208-230/1/60	4560	19.8	24.8	25
265LE-S2	5	208-230/1/60	2.5	2.6	500	15	208-230/1/60	4560	19.8	24.8	25

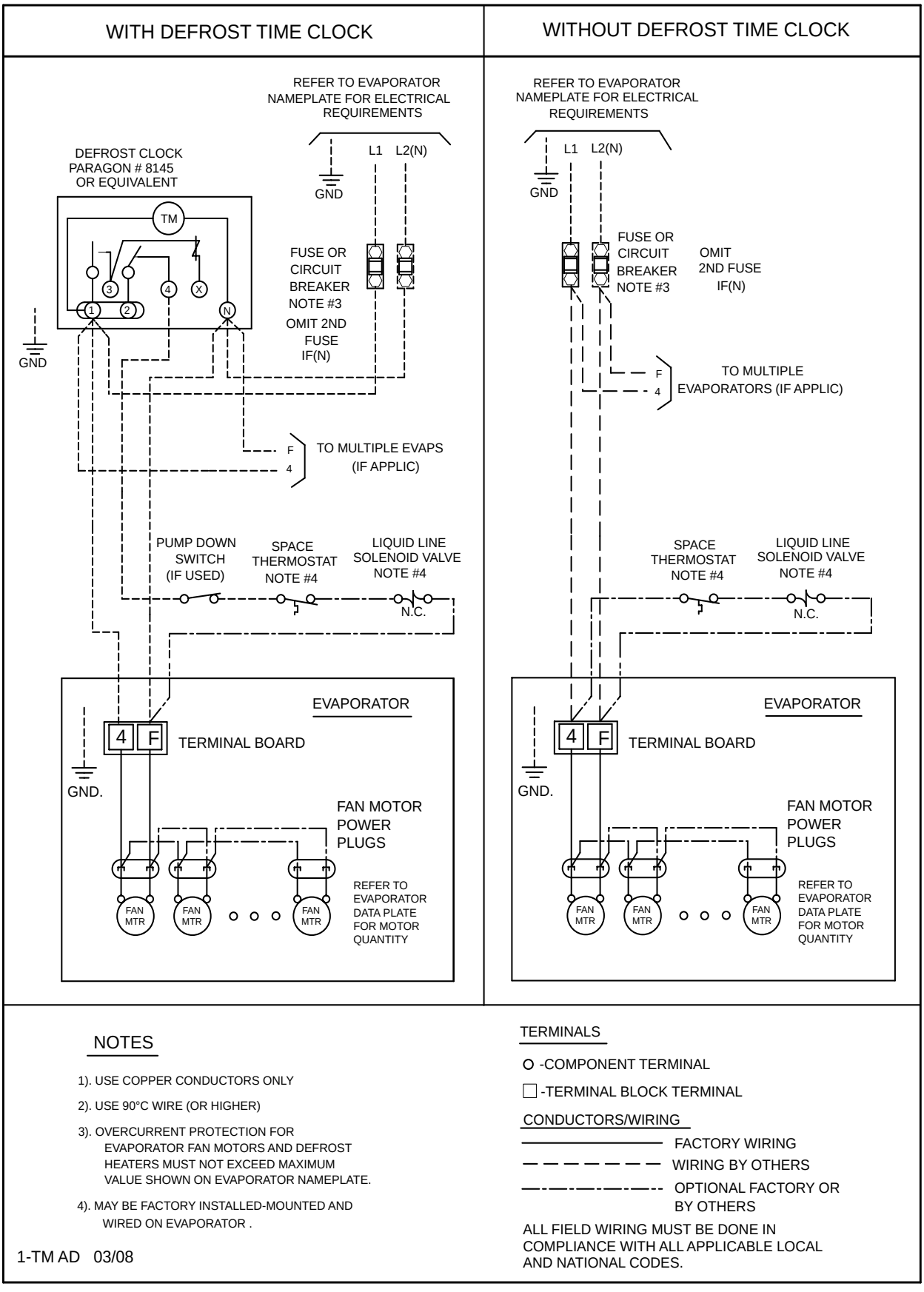
HOT GAS DEFROST

MODEL TTM	No. of FANS	POWER SUPPLY	FAN MOTOR(S) PSC-Standard				DRAIN PAN HEATERS				
			TOTAL AMPS	M.C.A.	WATTS	M.O.P	POWER SUPPLY	TOTAL WATTS	TOTAL AMPS	M.C.A.	M.O.P
115MG-S1	2	115/1/60	2.2	2.5	200	15	115/1/60	1300	11.3	14.1	15
139MG-S1	2	115/1/60	2.2	2.5	200	15	115/1/60	1300	11.3	14.1	15
172MG-S1	3	115/1/60	3.3	3.6	300	15	115/1/60	1860	16.2	20.3	25
208MG-S1	3	115/1/60	3.3	3.6	300	15	115/1/60	1860	16.2	20.3	25
236MG-S1	4	115/1/60	4.4	4.7	400	15	115/1/60	1860	16.2	20.3	25
260MG-S1	4	115/1/60	4.4	4.7	400	15	115/1/60	2280	19.8	24.8	25
295MG-S1	5	115/1/60	5.5	5.8	500	15	115/1/60	2280	19.8	24.8	25
115MG-S2	2	208-230/1/60	1.0	1.1	200	15	208-230/1/60	1300	5.7	7.1	15
139MG-S2	2	208-230/1/60	1.0	1.1	200	15	208-230/1/60	1300	5.7	7.1	15
172MG-S2	3	208-230/1/60	1.5	1.6	300	15	208-230/1/60	1860	8.1	10.1	15
208MG-S2	3	208-230/1/60	1.5	1.6	300	15	208-230/1/60	1860	8.1	10.1	15
236MG-S2	4	208-230/1/60	2.0	2.1	400	15	208-230/1/60	1860	8.1	10.1	15
260MG-S2	4	208-230/1/60	2.0	2.1	400	15	208-230/1/60	2280	9.9	12.4	15
295MG-S2	5	208-230/1/60	2.5	2.6	500	15	208-230/1/60	2280	9.9	12.4	15

TTM

WIRING DIAGRAM
AIR DEFROST - 120V & 208-230V

60Hz



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-TM AD 03/08

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.

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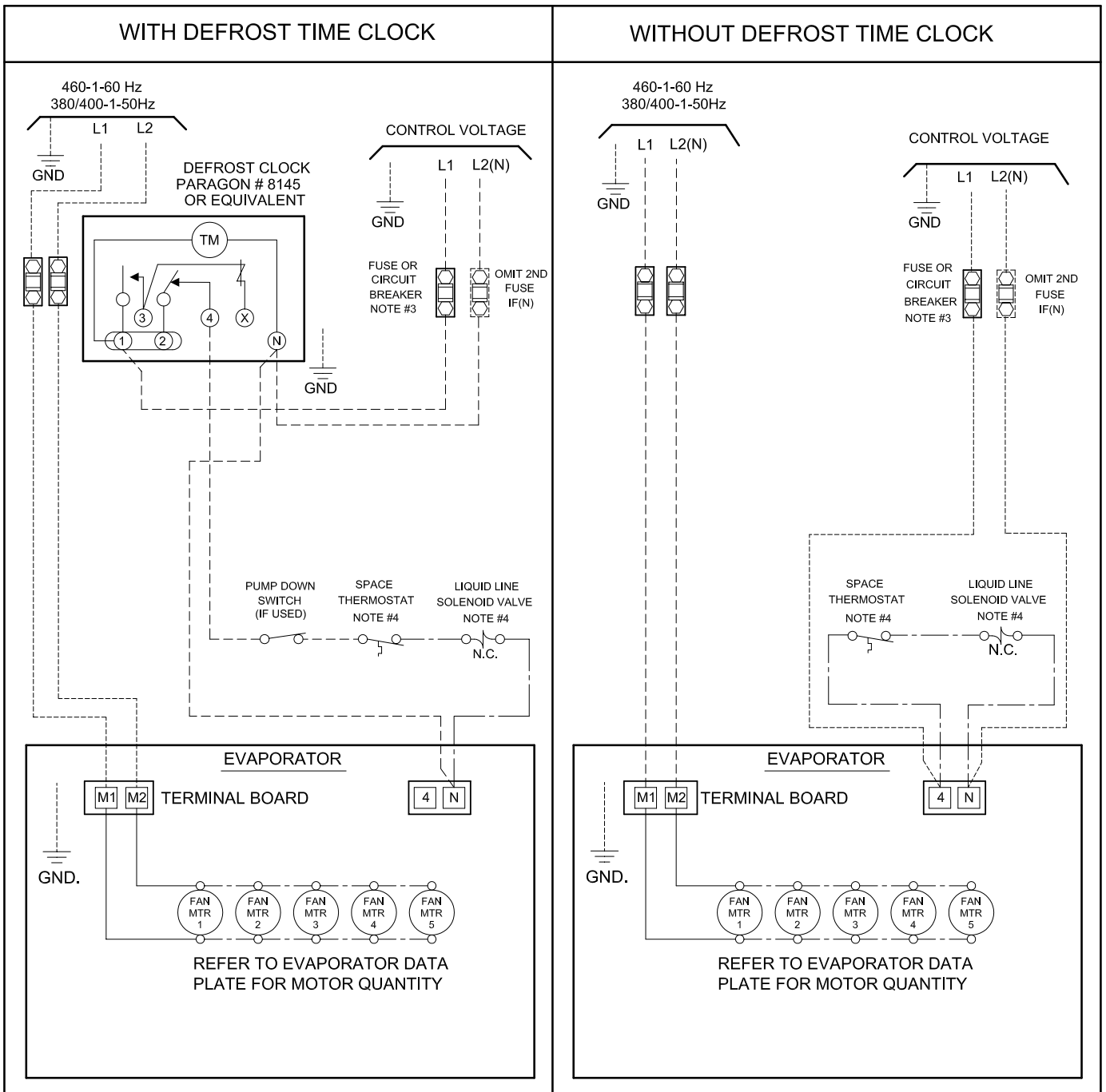
TTM

WIRING DIAGRAM
AIR DEFROST - 460V

60Hz



NOTES

1). USE COPPER CONDUCTORS ONLY

2). USE 90°C WIRE (OR HIGHER)

3). OVERCURRENT PROTECTION FOR EVAPORATOR FAN MOTORS MUST NOT EXCEED MAXIMUM VALUE SHOWN ON EVAPORATOR NAMEPLATE.

4). MAY BE FACTORY INSTALLED-MOUNTED AND WIRED ON EVAPORATOR .

5). REFER TO EVAPORATOR DATA PLATE FOR MOTOR QUANTITY

KTM AD 06/16

TERMINALS

○ -COMPONENT TERMINAL

□ -TERMINAL BLOCK TERMINAL

CONDUCTORS/WIRING

——————— FACTORY WIRING

– – – – – – – – – – – – WIRING BY OTHERS

——— · ——— · ——— OPTIONAL FACTORY OR BY OTHERS

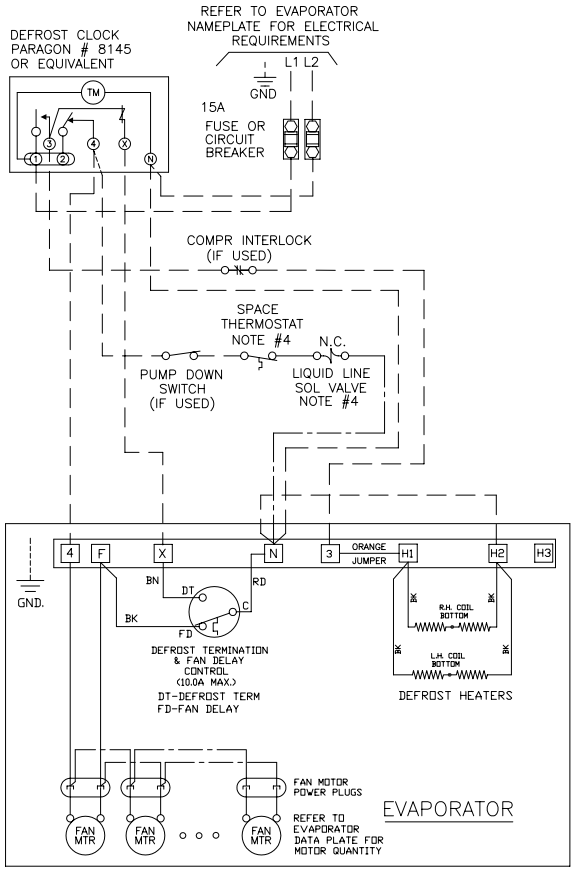
ALL FIELD WIRING MUST BE DONE IN COMPLIANCE WITH ALL APPLICABLE LOCAL AND NATIONAL CODES.

TTM

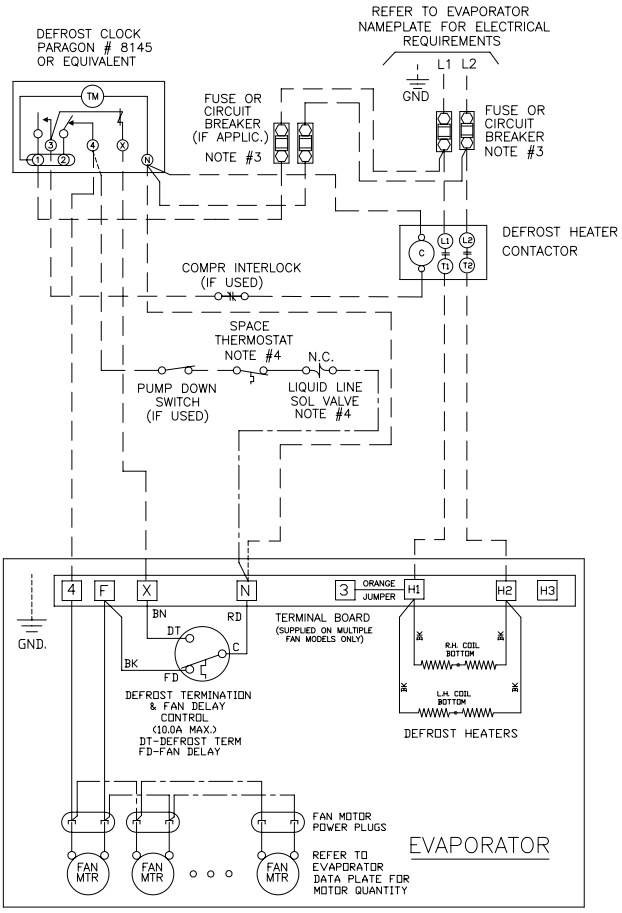
WIRING DIAGRAM
ELECTRIC DEFROST -
208-230V (SINGLE EVAPORATOR)

60Hz

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



FOR ALL MODELS USING 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

○ -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-TM ED 02/13

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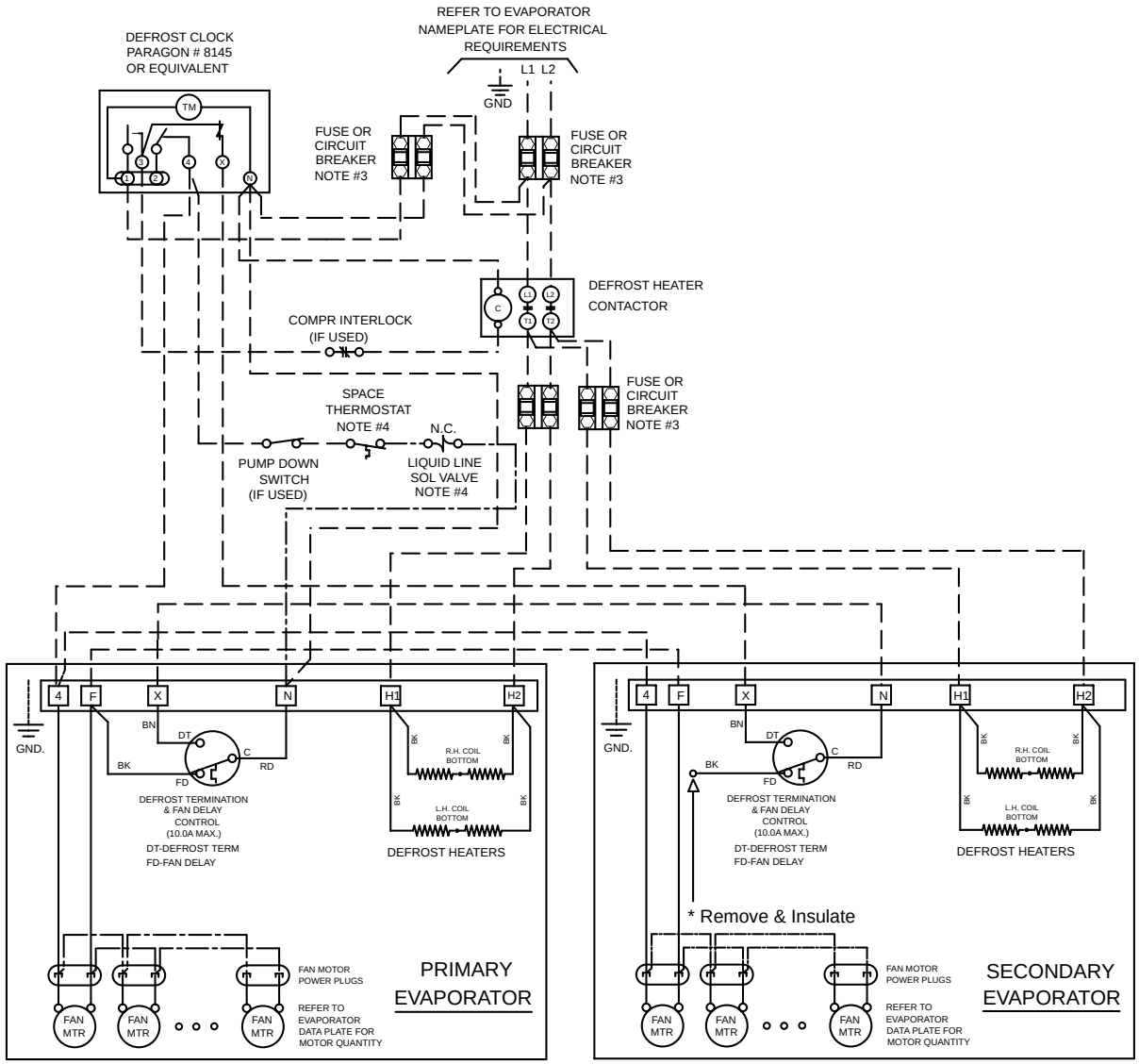
TTM

WIRING DIAGRAM
ELECTRIC DEFROST -
230V (MULTI EVAPORATOR)

60Hz

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

3-TM ED CONTACTOR MULTI 03/08

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.

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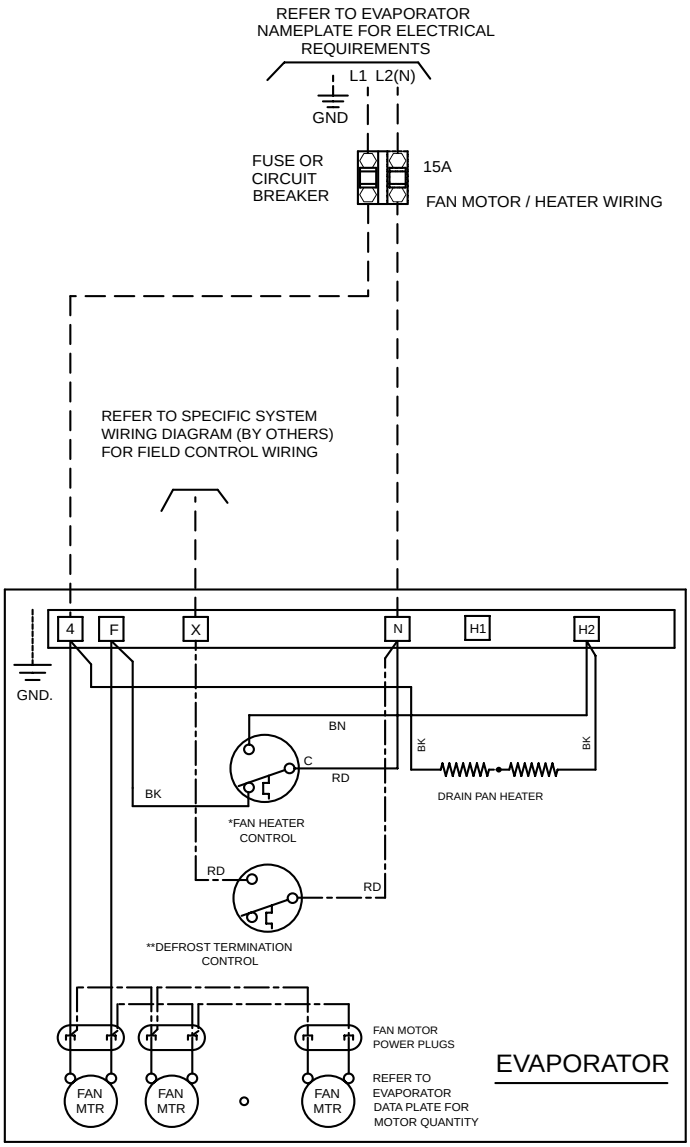
TTM

WIRING DIAGRAM
REVERSE CYCLE DEFROST - 230V

60Hz

USING MAXIMUM 15A HEATER OVERCURRENT PROTECTION



*FAN HEATER CONTROL
ON REVERSE CYCLE LOCATED AT SUCTION LINE.
NOTE: DURING THE HOT GAS DEFROST CYCLE THE FAN/HEATER CONTROL DE-ENERGIZES THE EVAPORATOR FANS AND ENERGIZES THE DRAIN PAN HEATER.
(ANYTIME THE TEMPERATURE OF THE INCOMING REFRIGERANT GAS IS ABOVE 50° F).

**DEFROST TERMINATION CONTROL
OPTIONAL FACTORY WIRED OR BY OTHERS
LOCATED ON TUBE END SHEET
THE CONTROL CLOSES WHEN REACHES 55` F (20 F DIFF)

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-TM HG 03/08

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.

INTUITIVE EVAPORATOR CONTROL TECHNOLOGY

What is ESP+?
Trenton Refrigeration's ESP+ intuitive evaporator control technology is designed to replace traditional electro-mechanical refrigeration controls typically used on medium and low temperature applications. By combining award winning adaptive technology along with an electronic expansion valve, Trenton Refrigeration continues Leading The Way with innovative, state-of-the-art designs.

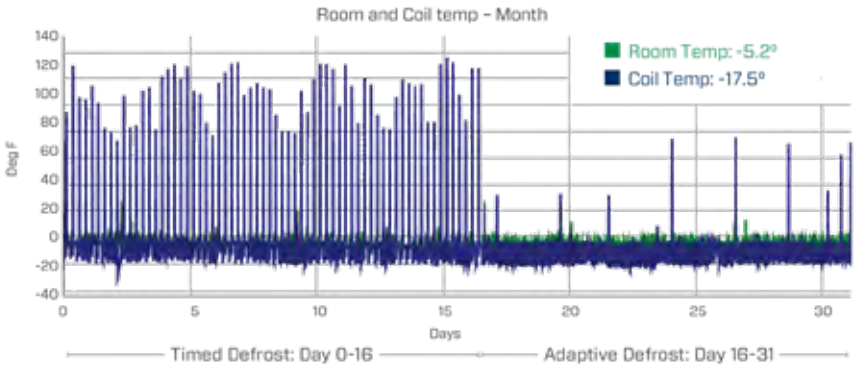
Installing an evaporator utilizing the ESP+ intuitive evaporator control technology is simple. Two pipes, two wires and you're done. No interconnecting control wiring between the evaporator and the condensing unit is required.

- Quick simple installation
- Improved evaporator performance by minimizing excessive frost on the evaporator
- Eliminates ice build up on surfaces and product
- Energy savings through evaporator fan management
- Energy savings with reduction in the number of defrost cycles
- Defrost heater management
- Improved system diagnostics and service through advanced alarm notification text/email
- Remote monitoring & system control
- User friendly interface
- Precise temperature control for prolonged product shelf life
- Improved product integrity with less potential for spoilage
- Downloadable data provides system history for prior 30 days
- Remotely view and change system parameters and alarm settings
- Manually control system
- Easily troubleshoot issues

ESP+ controls:
- Box Temperature - Superheat
- Defrost Initiation - Defrost Termination - Fan Motors
- Defrost Heater (Electric Defrost Models)

Plus - User can access operating data directly from the system interface

15-20% System Energy Savings over a Properly Commissioned System!



86% Fewer Defrost Cycles*

- Enhanced system performance
- Energy Savings
- Improved product integrity

* Data may vary depending on application

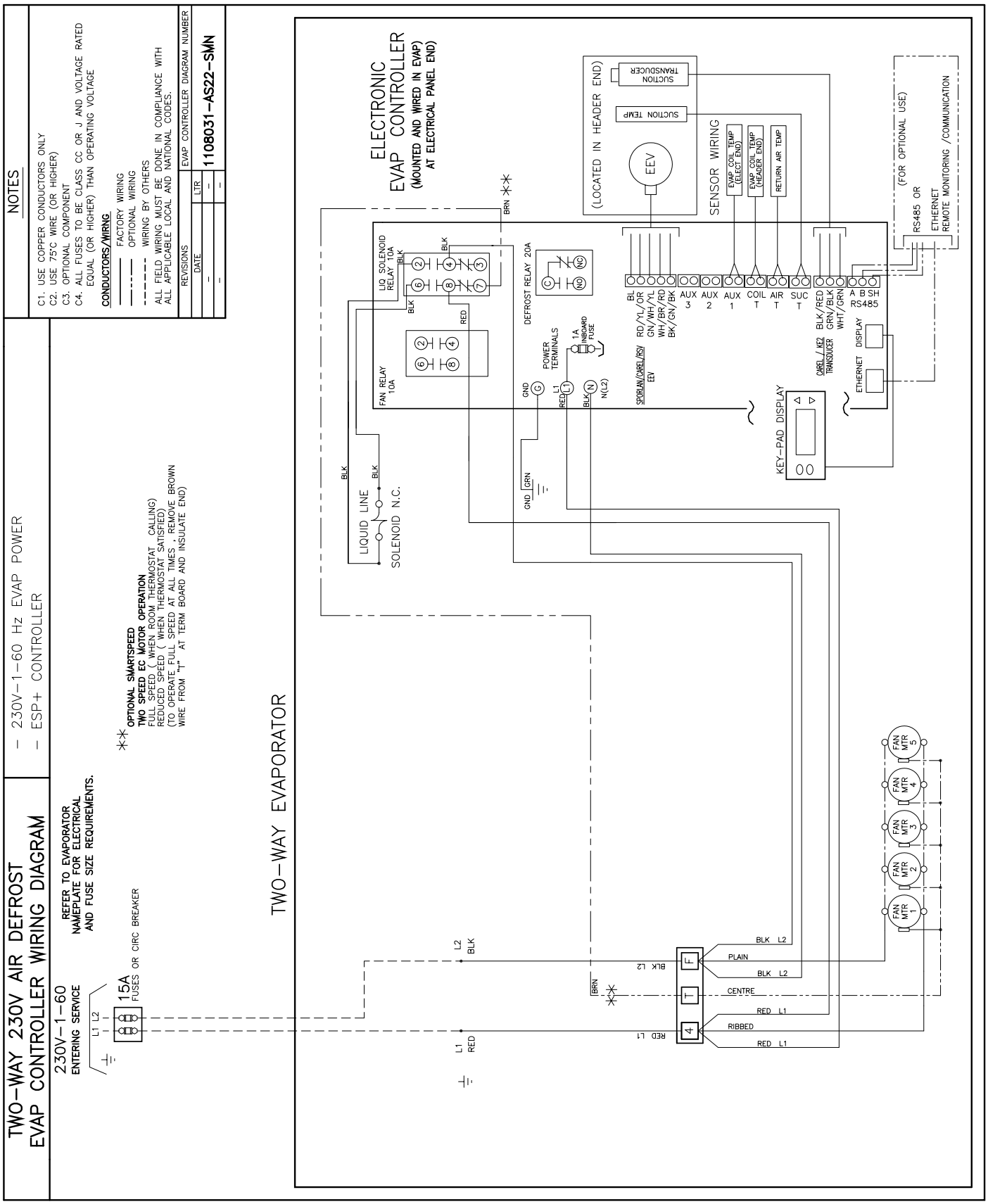
Visit www.t-rp.com/esp for details

TTM

WIRING DIAGRAM - 230/1/60

AIR DEFROST MODELS w/ ESP+

60Hz



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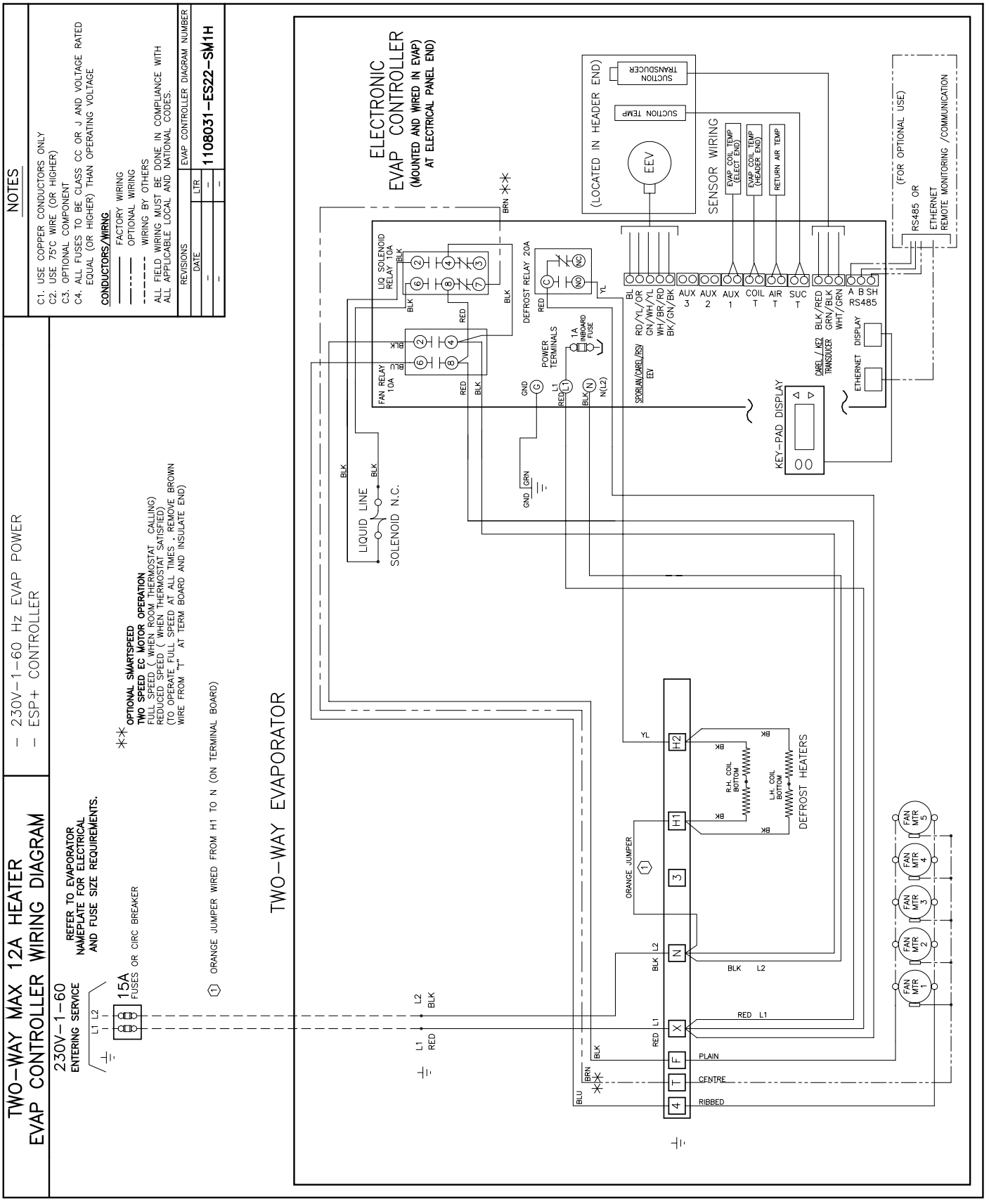
TTM

WIRING DIAGRAM - 230/1/60

60Hz

ELECTRIC DEFROST - MAX. 12A HEATER

MODELS w/ ESP+



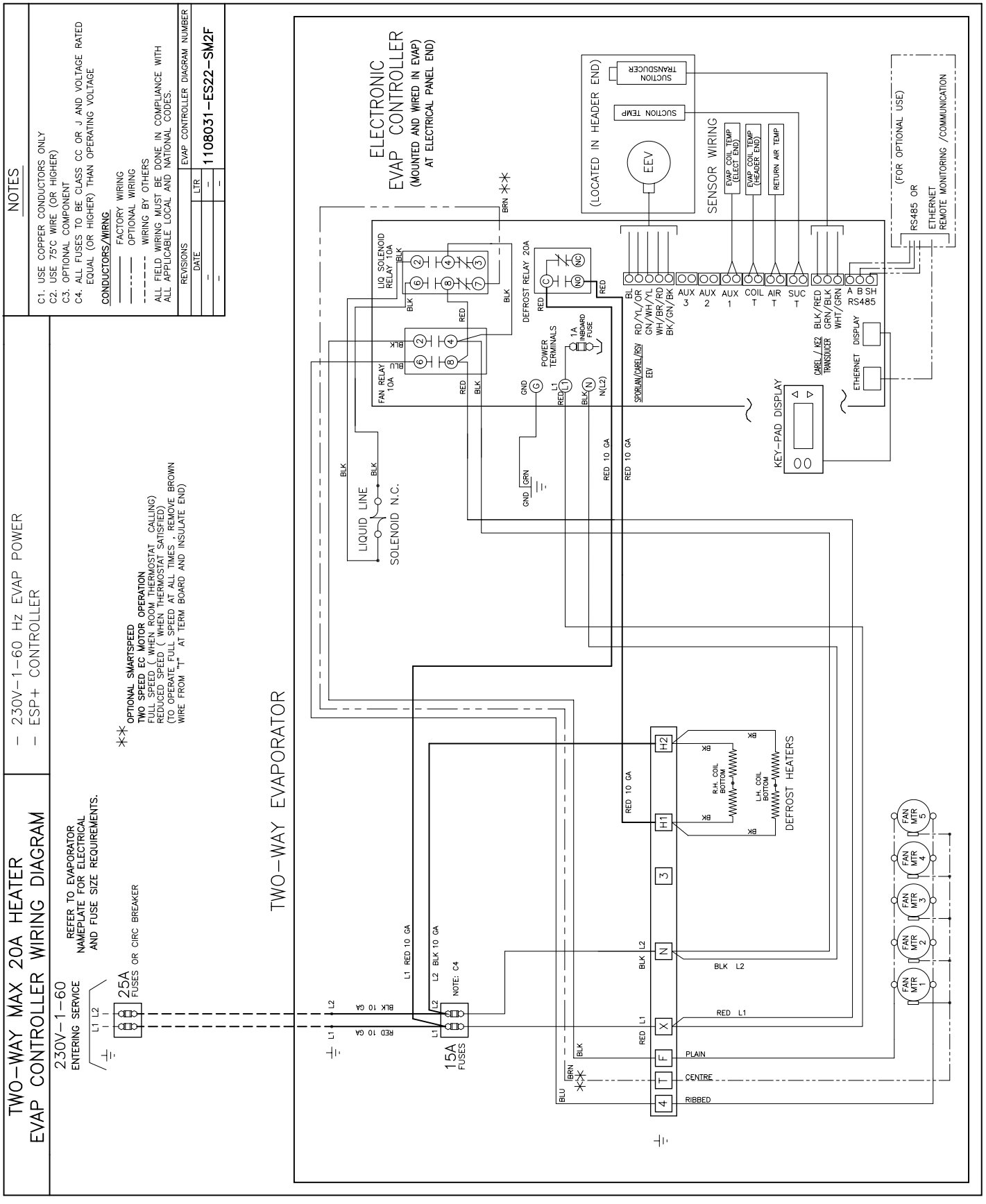
TTM

WIRING DIAGRAM - 230/1/60

ELECTRIC DEFROST - MAX 20A HEATER

MODELS w/ ESP+

60Hz



NOTE: Models in this document are not certified to DOE/NRCAN efficiency standards and should not be used for coolers or freezers less than 3000 sq.ft.

TTM

MECHANICAL DATA

60Hz

MODEL TTM	TUBE CONNECTIONS						APPROX. SHIPPING WEIGHT	
	SUCTION (OD)		DISTRIBUTOR INLET		HOT GAS SIDE (OD)			
	Inches	*mm*	Inches	*mm*	Inches	*mm*	Lbs.	*Kgs*
115M	7/8	*22*	1/2	*13*	1/2	*13*	110	*50*
139M	7/8	*22*	1/2	*13*	1/2	*13*	116	*53*
172M	7/8	*22*	1/2	*13*	1/2	*13*	150	*68*
208M	1 1/8	*29*	1/2	*13*	1/2	*13*	157	*71*
236M	1 1/8	*29*	1/2	*13*	1/2	*13*	164	*74*
260M	1 1/8	*29*	7/8	*22*	5/8	*16*	191	*87*
295M	1 1/8	*29*	7/8	*22*	5/8	*16*	198	*90*
105L	7/8	*22*	1/2	*13*	1/2	*13*	110	*50*
124L	1 1/8	*29*	1/2	*13*	1/2	*13*	116	*53*
153L	1 1/8	*29*	1/2	*13*	1/2	*13*	150	*68*
188L	1 1/8	*29*	7/8	*22*	5/8	*16*	157	*71*
210L	1 1/8	*29*	7/8	*22*	5/8	*16*	164	*74*
235L	1 3/8	*35*	7/8	*22*	5/8	*16*	191	*87*
265L	1 3/8	*35*	7/8	*22*	5/8	*16*	198	*90*

NOTE: Models in this document are not certified to DOE/NRCAN efficiency standards and should not be used for coolers or freezers less than 3000 sq.ft.

TTM

DIMENSIONAL DATA

Inches *(mm)*

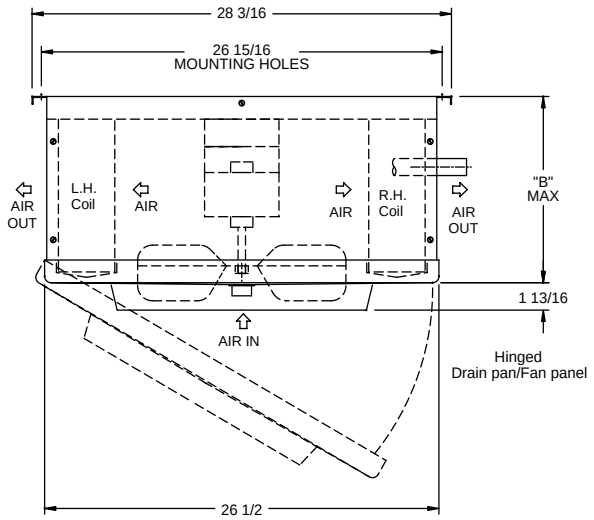
60Hz

NOTES: 1). Dimensions shown are typical for Air defrost, Electric, and Hot Gas defrost

2). Electrical connection end is opposite to the piping end on all models.

3). 1/4" O.D. external equalizer line and service access fitting included on all suction headers inside end compartment

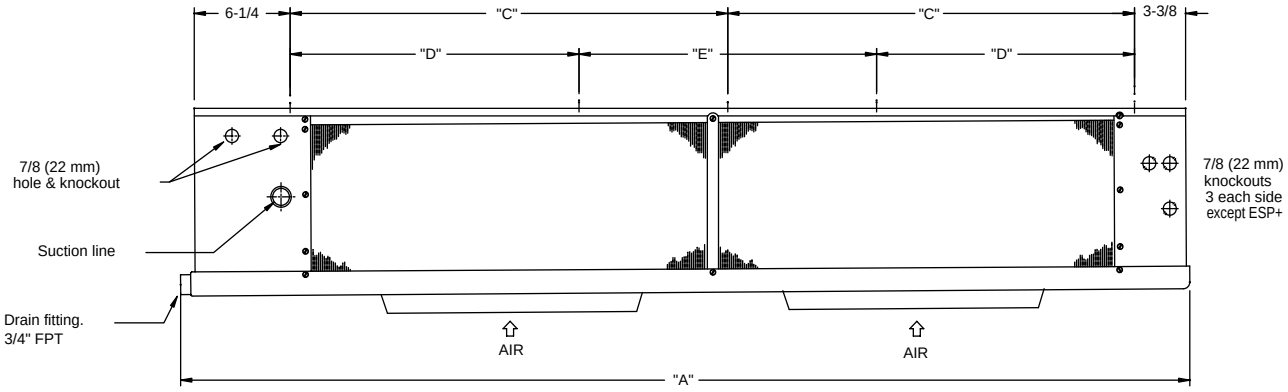
END VIEW



SIDE VIEW

MOUNTING HOLES (3/8" DIA.) & PIPING CONNECTION

Unit cooler is to be supported at all mounting points



DIMENSIONS

MODEL TTM	# FANS	A		B		C		D		E	
		in	*mm*	in	*mm*	in	*mm*	in	*mm*	in	*mm*
115M	2	67 1/2	*1715*	8 11/16	*221*	27 1/2	*699*	-	-	-	-
139M	2	67 1/2	*1715*	8 11/16	*221*	27 1/2	*699*	-	-	-	-
172M	3	93 1/2	*2375*	8 11/16	*221*	40 1/2	*1029*	-	-	-	-
208M	3	93 1/2	*2375*	8 11/16	*221*	40 1/2	*1029*	-	-	-	-
236M	4	93 1/2	*2375*	8 11/16	*221*	40 1/2	*1029*	-	-	-	-
260M	4	113 1/2	*2883*	8 11/16	*221*	-	-	40 1/2	*1029*	20	*508*
295M	5	113 1/2	*2883*	8 11/16	*221*	-	-	40 1/2	*1029*	20	*508*
105L	2	67 1/2	*1715*	8 11/16	*221*	27 1/2	*699*	-	-	-	-
124L	2	67 1/2	*1715*	8 11/16	*221*	27 1/2	*699*	-	-	-	-
153L	3	93 1/2	*2375*	8 11/16	*221*	40 1/2	*1029*	-	-	-	-
188L	3	93 1/2	*2375*	8 11/16	*221*	40 1/2	*1029*	-	-	-	-
210L	4	93 1/2	*2375*	8 11/16	*221*	40 1/2	*1029*	-	-	-	-
235L	4	113 1/2	*2883*	8 11/16	*221*	-	-	40 1/2	*1029*	20	*508*
265L	5	113 1/2	*2883*	8 11/16	*221*	-	-	40 1/2	*1029*	20	*508*

* Reducer supplied to accomodate 1/2" or 7/8" TXV outlet connection.

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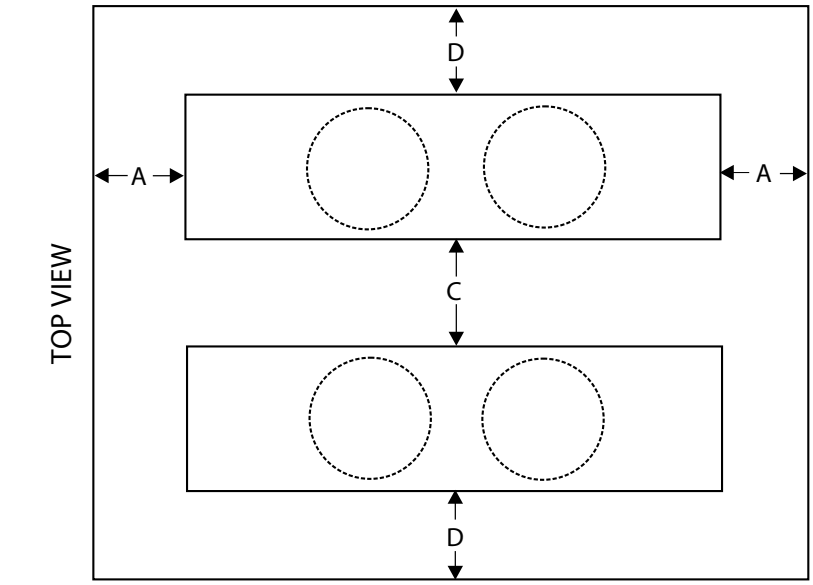
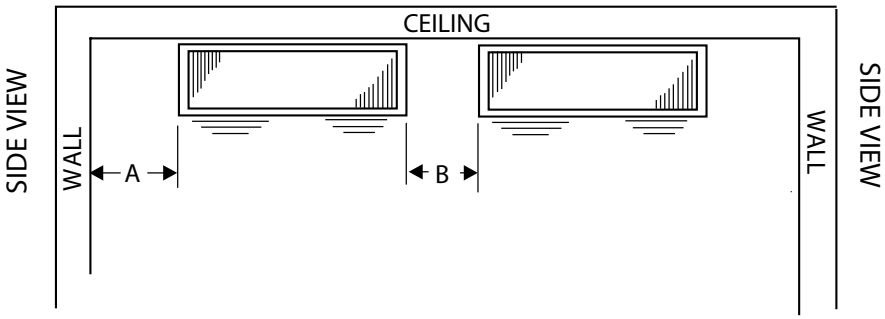
TTM

RECOMMENDED INSTALLATION CLEARANCES

60Hz





DIMENSION		A	B	C	D
MINIMUM	ft.	2	2	6	3
	cm.	*61*	*61*	*183*	*92*
Maximum	ft.	-	7	40	20
	cm.	-	*210*	*1200*	*600*

NOZZLE SELECTIONS

Nozzle Selections (Factory installed)

For all applications and refrigerants

Model TTM	Nozzle
115M	L-1
139M	L-1 1/2
172M	L-1 1/2
208M	L-2
236M	L-2
260M	G-2 1/2
295M	G-3

Model TTM	Nozzle
105L	L-1 1/2
124L	L-2
153L	J-2
188L	G-2 1/2
210L	G-3
235L	E-3
265L	E-4

MEDIUM TEMP - EXPANSION VALVE SELECTION

SPORLAN

MODEL TTM	TD	R404A R507 *	R448A R407A R407C R22
115M	10	SBFSE-A-C	SSE-3-C
	15	SBFSE-B-C	SBFVE-A-C
139M	10	SBFSE-A-C	SBFVE-A-C
	15	SBFSE-B-C	SBFVE-B-C
172M	10	SBFSE-B-C	SBFVE-A-C
	15	SBFSE-C-C	SBFVE-B-C
208M	10	SBFSE-B-C	SBFVE-B-C
	15	SSE-3-C	SBFVE-B-C
236M	10	SBFSE-B-C	SBFVE-B-C
	15	SSE-3-C	SBFVE-C-C
260M	10	SBFSE-C-C	SBFVE-B-C
	15	SSE-4-C	SBFVE-C-C
295M	10	SSE-3-C	SBFVE-B-C
	15	SSE-4-C	SBFVE-C-C

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

For R449A, use R448A data.

ALL TXV Selections based on 90-100°F liquid.

LOW TEMP - EXPANSION VALVE SELECTION

SPORLAN - R407A R448A

Model TTM	0°F Evap	-10°F Evap	-20°F Evap
105L	SBFVE-A-C	SBFVE-A-ZP40	SBFVE-A-ZP40
124L	SBFVE-A-C	SBFVE-A-ZP40	SBFVE-B-ZP40
153L	SBFVE-A-C	SBFVE-B-ZP40	SBFVE-B-ZP40
188L	SBFVE-B-C	SBFVE-B-ZP40	SBFVE-B-ZP40
210L	SBFVE-B-C	SBFVE-B-ZP40	SVE-3-ZP40
235L	SBFVE-B-C	SVE-3-ZP40	SVE-4-ZP40
265L	SVE-3-C	SVE-4-ZP40	SVE-4-ZP40

For R449A, use R448A data.

SPORLAN - R404A R507

Model TTM	0°F Evap	-10°F Evap	-20°F Evap
105L	SBFSE-A-C	SBFSE-A-ZP	SBFSE-A-ZP
124L	SBFSE-A-C	SBFSE-A-ZP	SBFSE-B-ZP
153L	SBFSE-B-C	SBFSE-B-ZP	SBFSE-B-ZP
188L	SBFSE-B-C	SBFSE-B-ZP	SBFSE-C-ZP
210L	SBFSE-C-C	SBFSE-C-ZP	SSE-3-ZP
235L	SBFSE-C-C	SSE-3-ZP	SSE-3-ZP
265L	SSE-3-C	SSE-3-ZP	SSE-4-ZP

* For low temp. R-507, refrigerant designation changes from 'SE' to 'PE'.

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FACTORY INSTALLED EXPANSION VALVE SELECTIONS - MODELS w/ ESP+

60Hz

MEDIUM TEMPERATURE
R448A R407A
AIR OR ELECTRIC DEFROST

MODEL TTM	FACTORY INSTALLED NOZZLE	FACTORY INSTALLED EXPANSION VALVE	FACTORY INSTALLED LIQUID LINE SOLENOID VALVE
115M* **	L1	E2V14	3
139M* **	L1-1/2	E2V14	3
172M* **	L1-1/2	E2V14	3
208M* **	L2	E2V14	3
236M* **	L2	E2V14	3
260M* **	G2-1/2	E2V14	3
295M* **	G3	E2V14	3

*** Insert defrost type. See nomenclature for details

MEDIUM TEMPERATURE
R404A R507
AIR OR ELECTRIC DEFROST

MODEL TTM	FACTORY INSTALLED NOZZLE	FACTORY INSTALLED EXPANSION VALVE	FACTORY INSTALLED LIQUID LINE SOLENOID VALVE
115M* **	L1	E2V14	3
139M* **	L1-1/2	E2V18	5
172M* **	L1-1/2	E2V24	5
208M* **	L2	E2V24	5
236M* **	L2	E2V24	6
260M* **	G2-1/2	E2V24	6
295M* **	G3	E2V24	6

*** Insert defrost type. See nomenclature for details

LOW TEMPERATURE
R448A R407A
AIR OR ELECTRIC DEFROST

MODEL TTM	FACTORY INSTALLED NOZZLE	FACTORY INSTALLED EXPANSION VALVE	FACTORY INSTALLED LIQUID LINE SOLENOID VALVE
105L* **	L1-1/2	E2V11	3
124L* **	L2	E2V11	3
153L* **	J2	E2V14	3
188M* **	G2-1/2	E2V14	5
210L* **	G3	E2V18	5
235L* **	E3	E2V18	5
265L* **	E4	E2V18	5

*** Insert defrost type. See nomenclature for details

LOW TEMPERATURE
R404A R507
AIR OR ELECTRIC DEFROST

MODEL TTM	FACTORY INSTALLED NOZZLE	FACTORY INSTALLED EXPANSION VALVE	FACTORY INSTALLED LIQUID LINE SOLENOID VALVE
105L* **	L1-1/2	E2V14	3
124L* **	L2	E2V14	5
153L* **	J2	E2V18	5
188M* **	G2-1/2	E2V18	5
210L* **	G3	E2V24	6
235L* **	E3	E2V24	6
265L* **	E4	E2V24	6

*** Insert defrost type. See nomenclature for details

ESP+

Visit
www.t-rp.com/esp
for Quick Start Guide, Operation Manual, etc

TTM

FAN/HEATER CONTROL AND DEFROST TERMINATION CONTROL POSITION

60Hz

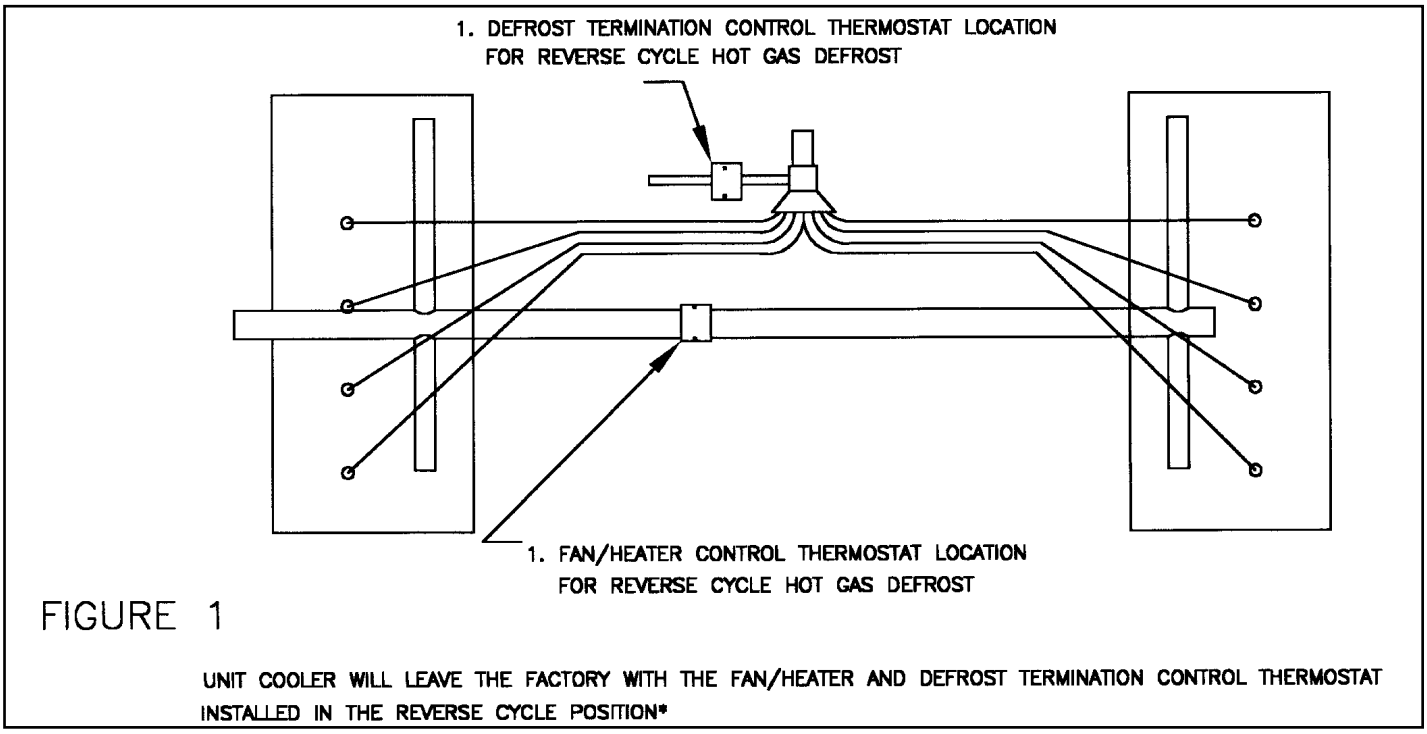
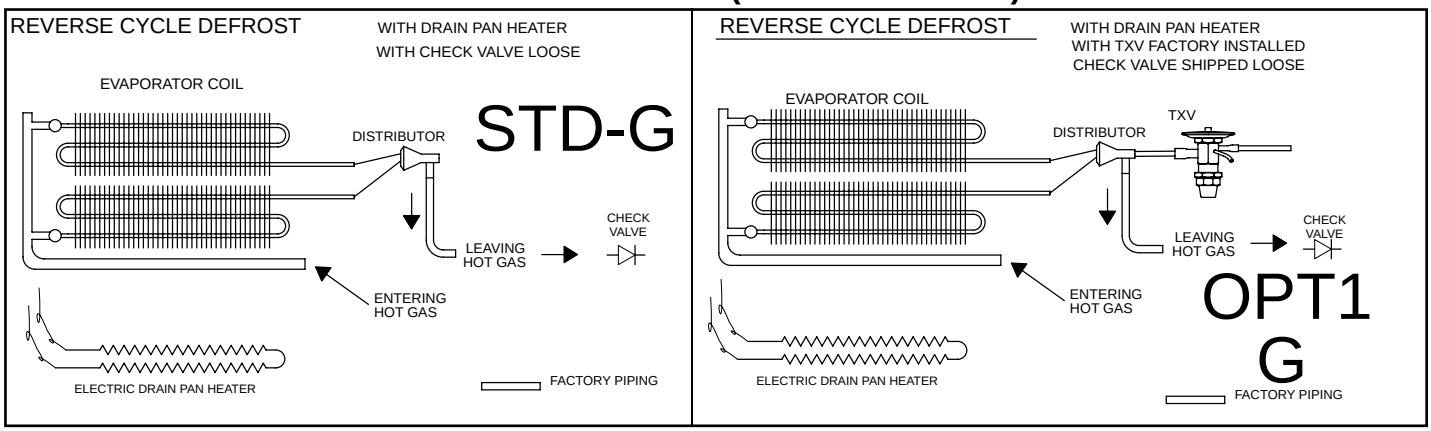


FIGURE 1

UNIT COOLER WILL LEAVE THE FACTORY WITH THE FAN/HEATER AND DEFROST TERMINATION CONTROL THERMOSTAT INSTALLED IN THE REVERSE CYCLE POSITION*

HOT GAS DEFROST (REVERSE CYCLE)



NOTE: Models in this document are not certified to DOE/NRCAN efficiency standards and should not be used for coolers or freezers less than 3000 sq.ft.

TTM DEFROST KIT AND FUSE PACKAGE SELECTIONS 60Hz

Models with Standard PSC Motors

Medium Temperature, 6 FPI, with standard PSC Motors

TEMP	FPI	# of Fans	Model TTM	Voltage	1 X EVAPORATOR		2 X EVAPORATOR	
					Defrost Kit	Fuse Package	Defrost Kit	Fuse Package
ME - MEDIUM	6	2	**115ME-S2A-C**	208-230/1/60	DFK-02	FP-004	DFK-06	FP-008
			139ME-S2A-C	208-230/1/60	DFK-02	FP-004	DFK-06	FP-008
		3	**172ME-S2A-C**	208-230/1/60	DFK-02	FP-007	DFK-06	FP-010
			208ME-S2A-C	208-230/1/60	DFK-02	FP-007	DFK-06	FP-010
		4	**236ME-S2A-C**	208-230/1/60	DFK-02	FP-007	DFK-06	FP-010
			260ME-S2A-C	208-230/1/60	DFK-02	FP-007	DFK-06	FP-010
		5	**295ME-S2A-C**	208-230/1/60	DFK-02	FP-007	DFK-06	FP-010

Low Temperature, 6 FPI, with standard PSC Motors

TEMP	FPI	# of Fans	Model TTM	Voltage	1 X EVAPORATOR		2 X EVAPORATOR	
					Defrost Kit	Fuse Package	Defrost Kit	Fuse Package
LE - LOW	6	2	**105LE-S2A-C**	208-230/1/60	DFK-02	FP-004	DFK-06	FP-008
			124LE-S2A-C	208-230/1/60	DFK-02	FP-004	DFK-06	FP-008
		3	**153LE-S2A-C**	208-230/1/60	DFK-02	FP-007	DFK-06	FP-010
			188LE-S2A-C	208-230/1/60	DFK-02	FP-007	DFK-06	FP-010
		4	**210LE-S2A-C**	208-230/1/60	DFK-02	FP-007	DFK-06	FP-010
			235LE-S2A-C	208-230/1/60	DFK-02	FP-007	DFK-06	FP-010
		5	**265LE-S2A-C**	208-230/1/60	DFK-02	FP-007	DFK-06	FP-010

NOTE: Models in this document are not certified to DOE/NRCAN efficiency standards and should not be used for coolers or freezers less than 3000 sq.ft.

TTM DEFROST KIT AND FUSE PACKAGE DETAILS 60Hz

Defrost Kits

Number of Evaps.	Kit Part Number	Description
1	**DFK-01**	Time Clock, HtrCont - 1x 40A (3P), FB 1x 30A (1P)
1	**DFK-02**	Time Clock, HtrCont - 1x 40A (3P), FB 1x 30A (2P)
1	**DFK-03**	Time Clock, HtrCont - 1x 40A (3P), FB 1x 30A (3P)
1	**DFK-04**	Time Clock, HtrCont - 1x 40A (3P), FB 1x 60A (2P)
2	**DFK-05**	Time Clock, HtrCont - 1x 40A (3P), FB 2x 30A (1P)
2	**DFK-06**	Time Clock, HtrCont - 1x 40A (3P), FB 2x 30A (2P)
2	**DFK-07**	Time Clock, HtrCont - 1x 40A (3P), FB 2x 30A (3P)
2	**DFK-08**	Time Clock, HtrCont - 1x 50A (3P), FB 2x 60A (2P)
2	**DFK-09**	Time Clock, HtrCont - 1x 50A (3P), FB 2x 30A (2P)
1	**DFK-10**	Time Clock, HtrCont - 1x 40A (3P), FanCont - 1x 40A (3P), FB 2x 30A (2P)
1	**DFK-11**	Time Clock, HtrCont - 1x 40A (3P), FanCont - 1x 40A (3P), FB 2x 30A (3P)
2	**DFK-12**	Time Clock, HtrCont - 1x 40A (3P), FanCont - 1x 40A (3P), FB 4x 30A (2P)
2	**DFK-13**	Time Clock, HtrCont - 1x 40A (3P), FanCont - 1x 40A (3P), FB 4x 30A (3P)
1	**DFK-14**	Time Clock, HtrCont - 1x 40A (3P), FanCont - 1x 40A (3P), FB 1x 30A (2P), FB 1x 30A (3P)
1	**DFK-15**	Time Clock, HtrCont - 1x40A (3P), FanCont - 1x 40A (3P), FB 1x 30A (2P), FB 1x 60A (2P)
1	**DFK-16**	Time Clock, HtrCont - 1x 40A (3P), FanCont - 1x 40A (3P), FB 1x 30A (2P), FB 1x 60A (3P)
1	**DFK-17**	Time Clock, HtrCont - 1x 40A (3P), FanCont - 1x 40A (3P), FB 1x 30A (3P), FB 1x 60A (3P)
2	**DFK-18**	Time Clock, HtrCont - 1x 40A (3P), FanCont - 1x 40A (3P), FB 2x 30A (2P), FB 2x 30A (3P)
2	**DFK-19**	Time Clock, HtrCont - 1x 50A (3P), FanCont - 1x 40A (3P), FB 4x 30A (2P)
2	**DFK-20**	Time Clock, HtrCont - 1x 50A (3P), FanCont - 1x 40A (3P), FB 4x 30A (3P)
1	**DFK-21**	Time Clock, HtrCont - 1x 50A (3P), FanCont - 1x 40A (3P), FB 1x 30A (2P), FB 1x 60A (2P)
1	**DFK-22**	Time Clock, HtrCont - 1x 50A (3P), FanCont - 1x 40A (3P), FB 1x 30A (3P), FB 1x 60A (3P)
2	**DFK-23**	Time Clock, HtrCont - 1x 50A (3P), FanCont - 1x 40A (3P), FB 2x 30A (2P), FB 2x 30A (3P)
2	**DFK-24**	Time Clock, HtrCont - 1x 50A (3P), FanCont - 1x 40A (3P), FB 2x 30A (3P), FB 2x 60A (3P)
1	**DFK-25**	Time Clock, HtrCont - 2x 40A (3P), FanCont - 1x 40A (3P), FB 1x 30A (2P), FB 2x 60A (2P)
1	**DFK-26**	Time Clock, HtrCont - 2x 40A (3P), FanCont - 1x 40A (3P), FB 1x 30A (3P), FB 2x 60A (3P)
2	**DFK-27**	Time Clock, HtrCont - 2x 40A (3P), FanCont - 1x 40A (3P), FB 2x 30A (2P), FB 2x 60A (2P)
2	**DFK-28**	Time Clock, HtrCont - 2x 40A (3P), FanCont - 1x 40A (3P), FB 2x 30A (2P), FB 2x 60A (3P)
2	**DFK-29**	Time Clock, HtrCont - 2x 40A (3P), FanCont - 1x 40A (3P), FB 2x 30A (3P), FB 2x 60A (3P)
2	**DFK-30**	Time Clock, HtrCont - 2x 40A (3P), FanCont - 1x 50A (3P), FB 2x 30A (2P), FB 2x 60A (3P)
1	**DFK-31**	Time Clock, HtrCont - 2x 50A (3P), FanCont - 1x 40A (3P), FB 1x 30A (3P), FB 2x 60A (3P)
2	**DFK-32**	Time Clock, HtrCont - 2x 50A (3P), FanCont - 1x 40A (3P), FB 2x 30A (2P), FB 2x 60A (2P)
2	**DFK-33**	Time Clock, HtrCont - 2x 50A (3P), FanCont - 1x 40A (3P), FB 2x 30A (3P), FB 2x 60A (3P)
2	**DFK-34**	Time Clock, HtrCont - 4x 40A (3P), FanCont - 1x 40A (3P), FB 2x 30A (2P), FB 4x 60A (2P)
2	**DFK-35**	Time Clock, HtrCont - 4x 40A (3P), FanCont - 1x 40A (3P), FB 2x 30A (3P), FB 4x 60A (3P)
2	**DFK-36**	Time Clock, HtrCont - 4x 40A (3P), FanCont - 1x 50A (3P), FB 2x 30A (2P), FB 4x 60A (2P)
2	**DFK-37**	Time Clock, HtrCont - 4x 40A (3P), FanCont - 1x 50A (3P), FB 2x 30A (3P), FB 4x 60A (3P)
2	**DFK-38**	Time Clock, HtrCont - 4x 50A (3P), FanCont - 1x 50A (3P), FB 2x 30A (3P), FB 4x 60A (3P)
1	**DFK-39**	Time Clock, HtrCont1 - 1x 40A (3P), HtrCont2 - 2x 50A (3P), FanCont - 1x 40A (3P), FB 4x 60A (3P)

NOTE: HtrCont = Heater Contactor, FanCont = Fan Contactor, FB = Fuse Block, (1P), (2P), (3P) = Number of Poles

TTM

DEFROST KIT AND FUSE PACKAGE DETAILS (cont'd)

60Hz

Fuse Packages

Package Part Number	Description
FP-001	FUSES (1) 15AMP
FP-002	FUSES (1) 20AMP
FP-003	FUSES (1) 25AMP
FP-004	FUSES (2) 15AMP
FP-006	FUSES (2) 20AMP
FP-007	FUSES (2) 25AMP
FP-008	FUSES (4) 15AMP
FP-010	FUSES (4) 25AMP
FP-012	FUSES (2) 35AMP
FP-013	FUSES (3) 15AMP
FP-014	FUSES (3) 20AMP
FP-015	FUSES (4) 20AMP
FP-016	FUSES (4) 20AMP (6) 45AMP
FP-017	FUSES (4) 35AMP
FP-018	FUSES (6) 15AMP
FP-019	FUSES (6) 20AMP
FP-020	FUSES (2) 30AMP
FP-021	FUSES (4) 30AMP
FP-022	FUSES (8) 15AMP
FP-023	FUSES (2) 25AMP (3) 50AMP
FP-024	FUSES (2) 20AMP (3) 45AMP
FP-025	FUSES (6) 20AMP (6) 60AMP
FP-026	FUSES (6) 15AMP (12) 40AMP
FP-027	FUSES (6) 15AMP (6) 40AMP
FP-028	FUSES (6) 20AMP (12) 40AMP
FP-029	FUSES (6)15AMP (6) 50AMP
FP-030	FUSES (6) 15AMP (6) 45AMP
FP-031	FUSES (6) 15AMP (6) 35AMP
FP-032	FUSES (6) 15AMP (6) 30AMP
FP-033	FUSES (6) 25AMP (12) 50AMP
FP-034	FUSES (6) 20AMP (12) 35AMP
FP-035	FUSES (4) 25AMP (6) 50AMP
FP-036	FUSES (6) 25AMP (12) 60AMP
FP-037	FUSES (6) 20AMP (12) 60AMP
FP-038	FUSES (6) 20AMP (12) 50AMP
FP-039	FUSES (6) 20AMP (12) 45AMP
FP-040	FUSES (6) 15AMP (12) 45AMP
FP-041	FUSES (5) 15AMP
FP-042	FUSES (10) 15AMP
FP-043	FUSES (3) 25AMP (6) 60AMP
FP-044	FUSES (3) 20AMP (6) 60AMP
FP-045	FUSES (3) 20AMP (6) 50AMP
FP-046	FUSES (3) 25AMP (6) 45AMP
FP-047	FUSES (3) 15AMP (6) 45AMP
FP-048	FUSES (4) 15AMP (4) 45AMP
FP-049	FUSES (4) 15AMP (4) 40AMP
FP-050	FUSES (3) 15AMP (3) 60AMP
FP-051	FUSES (4) 20AMP (6) 50AMP
FP-052	FUSES (4) 15AMP (6) 45AMP
FP-053	FUSES (4) 15AMP (6) 30AMP

Package Part Number	Description
FP-054	FUSES (3)15AMP (6) 35AMP
FP-055	FUSES (2) 15AMP (2) 45AMP
FP-056	FUSES (2) 15AMP (2) 40AMP
FP-057	FUSES (2) 20AMP (3) 50AMP
FP-058	FUSES (2) 15AMP (3) 45AMP
FP-059	FUSES (2) 15AMP (3) 30AMP
FP-060	FUSES (2) 15AMP (2) 35AMP
FP-061	FUSES (2) 15AMP (2) 50AMP
FP-062	FUSES (2) 15AMP (2) 60AMP
FP-063	FUSES (2) 15AMP (3) 25AMP
FP-064	FUSES (2) 15AMP (3) 35AMP
FP-065	FUSES (2) 15AMP (3) 40AMP
FP-066	FUSES (2) 15AMP (3) 20AMP
FP-067	FUSES (4) 15AMP (4) 35AMP
FP-068	FUSES (4) 15AMP (4) 50AMP
FP-069	FUSES (4) 15AMP (4) 60AMP
FP-070	FUSES (4) 15AMP (6) 25AMP
FP-071	FUSES (4) 15AMP (6) 35AMP
FP-072	FUSES (4) 15AMP (6) 40AMP
FP-073	FUSES (4) 15AMP (6) 20AMP
FP-074	FUSES (3) 20AMP (3) 60AMP
FP-075	FUSES (3) 20AMP (6) 35AMP
FP-076	FUSES (3) 25AMP (6) 50AMP
FP-077	FUSES (3) 35AMP (9) 45AMP
FP-078	FUSES (3) 15AMP (3) 35AMP
FP-079	FUSES (3)15AMP (3) 45AMP
FP-080	FUSES (3) 15AMP (3) 50AMP
FP-081	FUSES (3) 20AMP (6) 40AMP
FP-082	FUSES (3) 15AMP (3) 40AMP
FP-083	FUSES (3) 15AMP (6) 40AMP
FP-084	FUSES (6) 15AMP (6) 60AMP
FP-085	FUSES (6) 15AMP (12) 35AMP
FP-086	FUSES (3) 35AMP (3) 45AMP (6) 60AMP
FP-087	FUSES (4) 20AMP (4) 40AMP (4) 50AMP
FP-088	FUSES (4) 15AMP (4) 35AMP (4) 40AMP
FP-089	FUSES (2) 20AMP (2) 40AMP (2) 50AMP
FP-090	FUSES (2) 15AMP (2) 35AMP (2) 40AMP
FP-091	FUSES (2) 20AMP (2) 35AMP (2) 40AMP
FP-092	FUSES (2) 25AMP (2) 40AMP (2) 50AMP
FP-093	FUSES (4) 20AMP (4) 35AMP (4) 40AMP
FP-094	FUSES (6) 15AMP (6) 25AMP
FP-095	FUSES (3) 15AMP (3) 25AMP
FP-096	FUSES (3) 15AMP (3) 30AMP
FP-097	FUSES (4) 15AMP (4) 30AMP
FP-098	FUSES (4) 15AMP (4) 25AMP
FP-099	FUSES (4) 15AMP (4) 20AMP
FP-100	FUSES (2) 15AMP (2) 20AMP
FP-101	FUSES (2) 15AMP (2) 25AMP
FP-102	FUSES (2) 15AMP (2) 30AMP
FP-103	FUSES (4) 25AMP (4) 40AMP (4) 50AMP

NOTE: FUSES 30AMP and Below - Class CC Type, FUSES 35AMP and Above - Class J Type

INSTALLATION
The installation and start-up of Two-Way 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
Two-Way Evaporators are designed for use in coolers and freezers such as reach in boxes, 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 34ºF (***1.1ºC***) and evaporating temperatures no lower than 27ºF (***-2.8ºC***) the air flowing through the coil will accomplish the defrost (Air Defrost).

At room temperatures 34ºF and below (to -10ºF) 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 R407A, R407C, R404A/R507, R22 and R134a refrigerants and their approved alternatives / replacements.

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 unit does not draw air in, or blow directly out, through an opened door and that the product does not obstruct the free circulation of air. Allow a minimum of 24" clearance at each end. Two-Way Evaporators draw air through the fans and discharge air through both coils.

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 BTUH or KW (thermal). The nominal rating is based at 10ºF T.D. ***(5 .5°C)*** (Room Temp. minus Evap. Temp.). Note that a higher / lower operating T.D.will increase / decrease this capacity rating by their direct ratio.

2. Determine the pressure drop across the valve by subtracting the suction (evaporating) pressure from the high side liquid pressure. Note: Also subtract the distributor pressure loss (use approx. 25 psig (***1.1 bar***) for R134a and 35 psig (***2.4 bar***) for R404A/R507/R22/ R407A/R448A).

3. Estimate entering liquid temperature. Temperatures lower than 100ºF ***(37.7°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.

5. 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 5 to 8˚F ***(2.7° to 4.4°C)*** for a 10 to 12˚F ***(5.5 to 6.6°C)*** T.D. Too high or low a super heat will result in unsatisfactory system performance and possible compressor problems.

NOZZLE INSTALLATION
All Two-Way Evaporators have nozzles installed at factory. For nozzle selection refer to selection table. In case it is required to install the nozzle at some point in the future, the nozzle retainer clip (in distributor) must be removed before inserting nozzle. Re-install clip ensuring nozzle is properly in place.

MOUNTING
Refer to dimensional drawing for recommended mounting arrangements. Formed mounting channels are provided for flush mounting to the ceiling. Ensure adequate clearance (at least 24" ***(600 mm)***) is provided at each end (to enable access to the electrical and refrig. compartments).
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 1/4" ***(6 mm)*** per foot. A trap in a warm area outside the room will allow proper draining through the tubing. Connection should be made to proper drainage facilities that comply with local regulations.

DRAIN LINE (cont'd)

To prevent freeze-up when the temperature of the refrigerated space is 35ºF ***(1.7°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 ***(-2.2°C)*** room, is satisfactory. Drain line heaters are not required for constant room temperature above 35°F ***(1.6°C)***.

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

PIPING

Refrigerant line sizes are important and **may not** be the same size as the coil connections. Consult "Recommended refrigerant line sizes" charts in any standard 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. On Hot Gas Defrost Systems the suction accumulator should be at least 2.5 times the coils operating charge.

See Dimensional data for line locations. Reverse Cycle models include a check valve (unmounted) packaged along with the nozzle in the refrig. connection compartment end panel.

WIRING

Wire system in accordance with governing standards and local codes. See data and wiring diagrams on pages 6 to 10 for wiring arrangement. Electrical wiring is to be sized in accordance with minimum circuit ampacity rating (MCA).

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

SYSTEM CHECK

Before Start-Up:

1. All wiring should be in accordance with local codes.
2. Refrigerant lines should be properly sized.
3. Off cycle defrost and electric defrost systems preferably must include a liqud line solenoid valve and suction accumulator.
4. Thorough evacuation and, dehydration has been performed.
5. The suction, discharge, and receiver service valves must be open.
6. The system preferably must include a liquid line 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 35°F ***(1.7 °C)*** on the hot gas coil. Also, it is normal for the fans to cycle a few times until the room temperature is pulled down.
3. Fan/Heater control and defrost termination control is factory installed for reverse cycle defrost operation.
4. In general, evaporators running with a TD of 10°F should have a superheat reading of 5 to 8°F ***(2.7°C to 4.4°C)***. For evaporators with a higher TD, the superheat should be 8 to 12°F ***(4.4 to 6.6 °C)***.
5. Heavy moisture loads are usually encountered when starting the system for the first time. This will 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. This may be done by rotating the inner dial on the timer until the pin in the outer dial is directly opposite the timer pointer. (Paragon 8145-20 Timer by others).
6. Observe that the system goes through at least one complete DEFROST CYCLE.

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. 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	
Model Number	Date of Start-Up
Serial Number	Service Contractor
Refrigerant	Phone
Electrical Supply	E-mail

TTM

PRODUCT SUPPORT RESOURCES

60Hz

PRODUCT SUPPORT	*web:* **www.t-rp.com/ttm** *email:* **evaps@t-rp.com** *call:* **1-844-893-3222 x520**
TROUBLESHOOTING	*email:* **troubleshooting@t-rp.com** *call:* **1-844-893-3222 x529**
SERVICE PARTS	*web:* **www.t-rp.com/parts** *email:* **parts@t-rp.com** *call:* **1-844-893-3222 x520**
WARRANTY	*web:* **www.t-rp.com/warranty** *email:* **warranty@t-rp.com** *call:* **1-844-893-3222 x507**
ORDERS	*email:* **orders@t-rp.com** *call:* **1-844-893-3222 x501**
SHIPPING	*email:* **shipping@t-rp.com** *call:* **1-844-893-3222 x503**

HOW CAN WE HELP YOU?

visit **www.t-rp.com/contact**

NOTE: Models in this document are not certified to DOE/NRCAN efficiency standards and should not be used for coolers or freezers less than 3000 sq.ft.

“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

c UL us LISTED 7L35

NSF

Due to the manufacturer’s policy of continuous product improvement, we reserve the right to make changes without notice.

28/09/20