TRANE®

Service Facts

Split System Cooling Condensers

2TTZ9048B1000A

IMPORTANT — This document contains a wiring diagram, a parts list, and service information. This is customer property and is to remain with this unit. Please return to service information pack upon completion of work.

⚠ WARNING: HAZARDOUS VOLTAGE - DISCONNECT POWER and DISCHARGE CAPACITORS BEFORE SERVICING

PRODUCT SPECIFICATIONS

OUTDOOR UNIT ①②	2TTZ9048B1000A
POWER CONNS. — V/PH/HZ ③	200/230/1/60
MIN. BRCH. CIR. AMPACITY	25
BR. CIR. } MAX. (AMPS)	40
PROT. RTG. } MIN. (AMPS)	40
COMPRESSOR	CLIMATUFF®
NO. USED - NO. SPEEDS	2 - 1
VOLTS/PH/HZ	200/230/1/60
1ST STAGE COMPRESSOR	
R.L. AMPS ⑦ - L.R. AMPS	8.4 - 62
2ND STAGE COMPRESSOR	
R.L. AMPS ⑦ - L.R. AMPS	17.6 - 107
FACTORY INSTALLED	
START COMPONENTS ⑧	YES
INSULATION/SOUND BLANKET	YES
COMPRESSOR HEAT	YES
OUTDOOR FAN	PROPELLER
DIA. (IN.) - NO. USED	27.6 - 1
TYPE DRIVE - NO. SPEEDS	DIRECT - 2
CFM @ 0.0 IN. W.G. ④	4200/2630
NO. MOTORS - HP	1 - 1/3
MOTOR SPEED R.P.M.	850
VOLTS/PH/HZ	200/230/1/60
F.L. AMPS	2.8
OUTDOOR COIL — TYPE	SPINE FIN™
ROWS - F.P.I.	2 - 24
FACE AREA (SQ. FT.)	26.37
TUBE SIZE (IN.)	3/8
REFRIGERANT	
LBS. — HCFC-22 (O.D. UNIT) ⑤	15 LBS., 12 OZ.
FACTORY SUPPLIED	YES
LINE SIZE - IN. O.D. GAS ⑥	1 -1/8
LINE SIZE - IN. O.D. LIQ. ⑥	3/8
DIMENSIONS	H X W X D
CRATED (IN.)	53.4 x 35.1 x 38.7
WEIGHT	
SHIPPING (LBS.)	454
NET (LBS.)	406

TUBING INFORMATION

Tubing Sizes Suction	Tubing Sizes Liquid	Tubing Length	Additional Refrigerant
1-1/8"	3/8"	20'	4 oz.
1-1/8"	3/8"	30'	11 oz.
1-1/8"	3/8"	40'	19 oz.
1-1/8"	3/8"	50'	27 oz.
1-1/8"	3/8"	60'	34 oz.

Tubing lengths in excess of eighty (80) feet see application software.

① Certified in accordance with the Unitary Air-conditioner Equipment certification program, which is based on A.R.I. standard 210/240.
② Rated in accordance with A.R.I. standard 270.
③ Calculated in accordance with Natl. Elec. Codes. Only use HACR circuit breakers or fuses.
④ Standard Air — Dry Coil — Outdoor
⑤ This value approximate. For more precise value see unit nameplate.
⑥ Max. linear length 80 ft.; Max. lift - Suction 25 ft.; Max lift - Liquid 25 ft. For greater length consult refrigerant piping software Pub. No. 32-3312-0* (* denotes latest revision).
⑦ This value shown for compressor RLA on the unit nameplate and on this specification sheet is used to compute minimum branch circuit ampacity and max. fuse size. The value shown is the branch circuit selection current.
⑧ No means no start components. Yes means quick start kit components. PTC means positive temperature coefficient starter.

⚠ CAUTION

CONTAINS REFRIGERANT!

SYSTEM CONTAINS OIL AND REFRIGERANT UNDER HIGH PRESSURE. RECOVER REFRIGERANT TO RELIEVE PRESSURE BEFORE OPENING SYSTEM.

Failure to follow proper procedures can result in personal illness or injury or severe equipment damage.

⚠ WARNING

THIS INFORMATION IS INTENDED FOR USE BY INDIVIDUALS POSSESSING ADEQUATE BACKGROUNDS OF ELECTRICAL AND MECHANICAL EXPERIENCE. ANY ATTEMPT TO REPAIR A CENTRAL AIR CONDITIONING PRODUCT MAY RESULT IN PERSONAL INJURY AND OR PROPERTY DAMAGE. THE MANUFACTURER OR SELLER CANNOT BE RESPONSIBLE FOR THE INTERPRETATION OF THIS INFORMATION, NOR CAN IT ASSUME ANY LIABILITY IN CONNECTION WITH ITS USE.

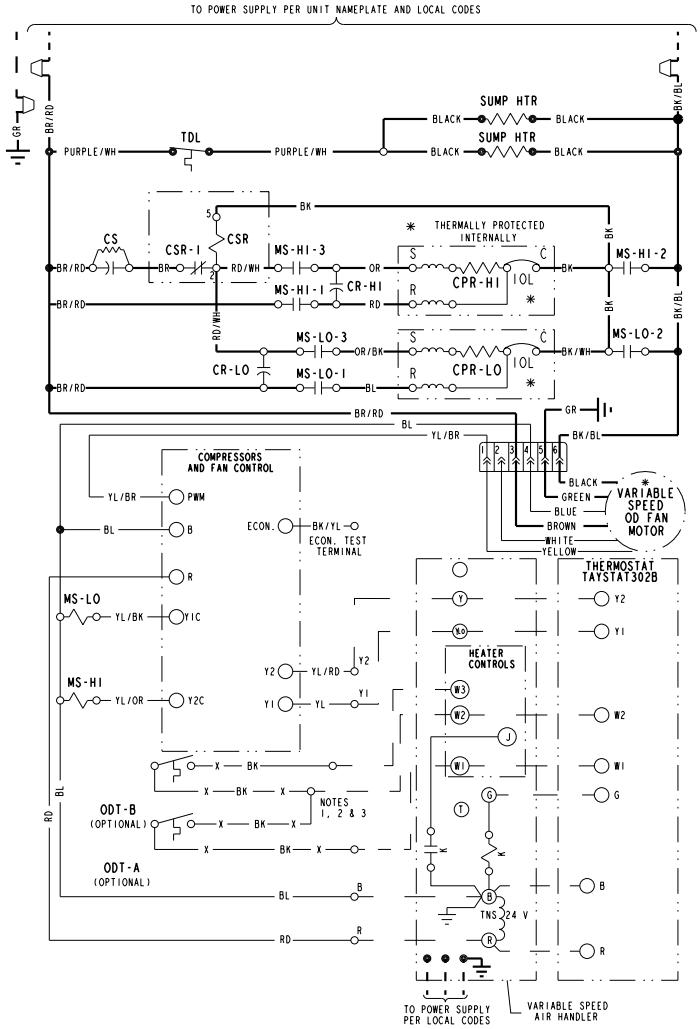
⚠ CAUTION

RECONNECT ALL GROUNDING DEVICES.
ALL PARTS OF THIS PRODUCT CAPABLE OF CONDUCTING ELECTRICAL CURRENT ARE GROUNDED. IF GROUNDING WIRES, SCREWS, STRAPS, CLIPS, NUTS OR WASHERS USED TO COMPLETE A PATH TO GROUND ARE REMOVED FOR SERVICE, THEY MUST BE RETURNED TO THEIR ORIGINAL POSITION AND PROPERLY FASTENED.

NOTICE: Trane has a policy of continuous product and product data improvement **and** it reserves the right to change design and specifications without notice.

SCHEMATIC DIAGRAM

2TTZ9048B1000A



CA	COOLING ANTICIPATOR	LPCO	LOW PRESSURE CUTOUT SW.
CBS	COIL BOTTOM SENSOR	MS	COMPRESSOR MOTOR CONTACTOR
CF	FAN CAPACITOR	ODA	OUTDOOR ANTICIPATOR
CN	WIRE CONNECTOR	OFT	OUTDOOR FAN THERMOSTAT
CPR	COMPRESSOR	ODS	OUTDOOR TEMPERATURE SENSOR
CR	RUN CAPACITOR	ODT	OUTDOOR THERMOSTAT
CS	STARTING CAPACITOR	RHS	RESISTANCE HEAT SWITCH
CSR	CAPACITOR SWITCHING RELAY	SC	SWITCHOVER VALVE SOLENOID
DFC	DEFROST CONTROL	SW	SYSTEM "ON-OFF" SWITCH
F	INDOOR FAN RELAY	TDL	DISCHARGE LINE THERMOSTAT
HA	HEATING ANTICIPATOR	TNS	TRANSFORMER
HPCO	HIGH PRESSURE CUTOUT SW.	TS	HEATING-COOLING THERMOSTAT
IOL	INTERNAL OVERLOAD PROTECTOR	TSH	HEATING THERMOSTAT

⚠ WARNING

HAZARDOUS VOLTAGE!

DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS BEFORE SERVICING.

FAILURE TO DISCONNECT POWER BEFORE SERVICING CAN CAUSE SEVERE PERSONAL INJURY OR DEATH!

⚠ CAUTION

USE COPPER CONDUCTORS ONLY!

UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.

FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT!

COLOR OF WIRE
BK/BL BLACK WIRE WITH BLUE MARKER
COLOR OF MARKER

BK	BLACK	OR	ORANGE	YL	YELLOW
BL	BLUE	RD	RED	GR	GREEN
BR	BROWN	WH	WHITE	PR	PURPLE

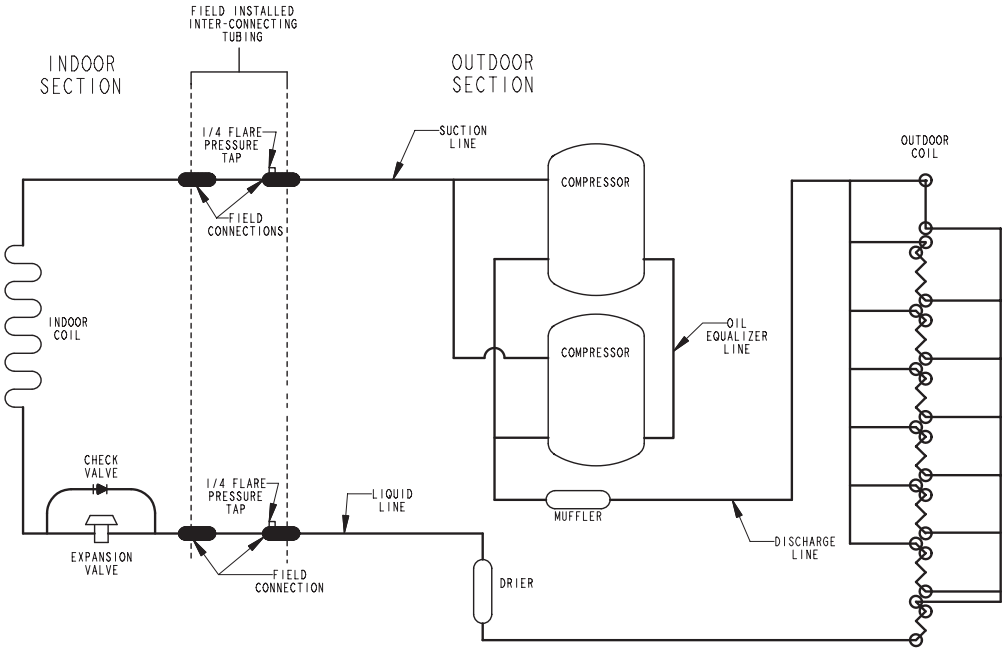
NOTES:

1. IF ODT-B IS NOT USED, ADD JUMPER BETWEEN W2 & W3 AT AIR HANDLER. IF USED, ODT-B MUST BE MOUNTED REMOTE OF CONTROL BOX IN AN APPROVED WEATHER PROOF ENCLOSURE.
2. IF ODT-A IS NOT USED, ADD JUMPER BETWEEN W1 & W2 AT AIR HANDLER.
3. LOW VOLTAGE (24 V.) FIELD WIRING MUST BE 18 AWG MIN.

NOTE
THREE PHASE MOTOR (S) FACTORY SUPPLIED IN THIS EQUIPMENT PROTECTED UNDER PRIMARY SINGLE-PHASE CONDITIONS.

LEGE

REFRIGERANT CIRCUIT

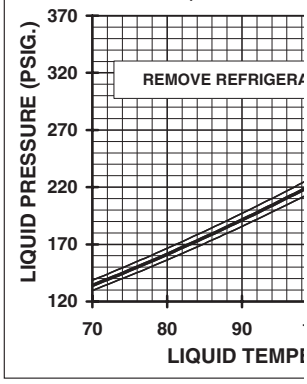


From Dwg. 21D153494 Rev. 0

FOR FIRST S

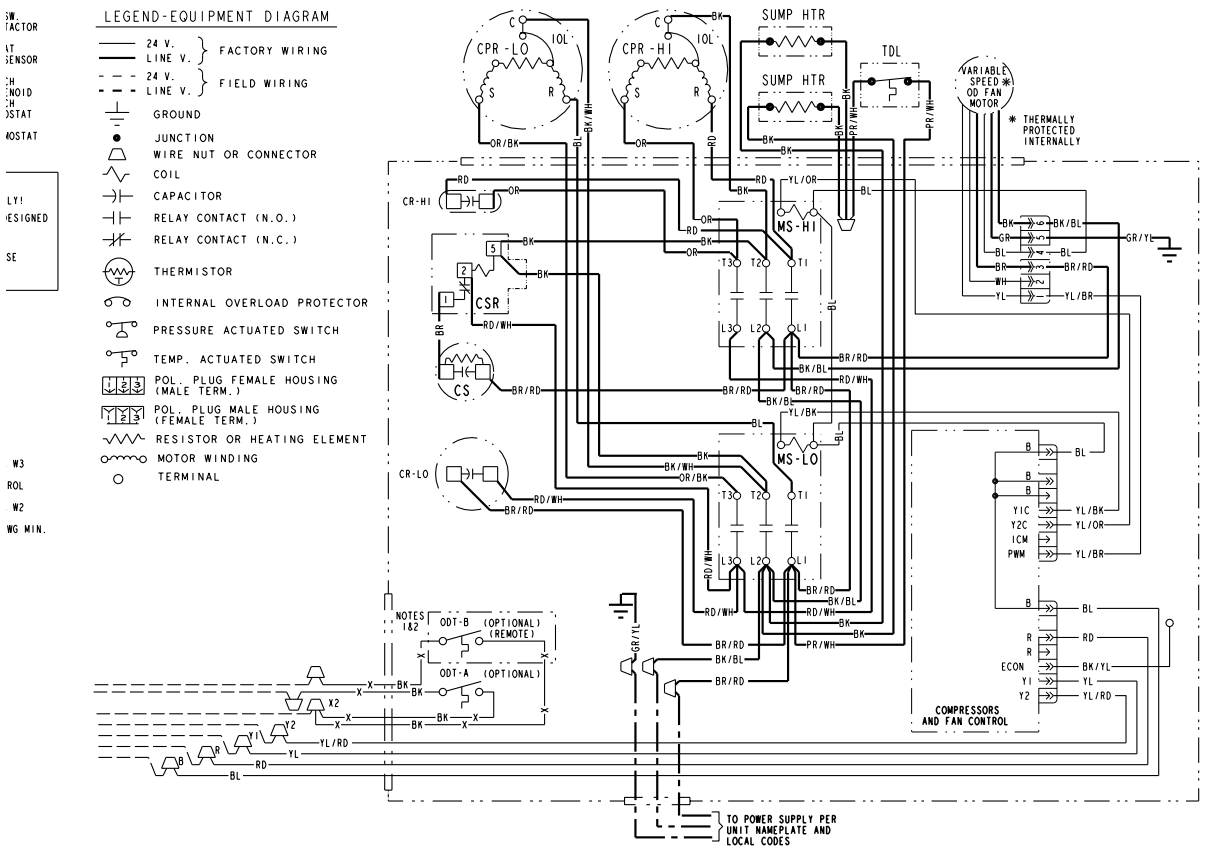
TXV REFRIGERANT

For charging outdoor units with outdoor temperature in coolin



1. Measure Liquid Line Temperature and Refrigerant Pressure at service valves.
2. Determine total refrigerant pipe length and height (lift) if indoor section is above the condenser. Plot the intersection of the two points on the Curve Selection Chart to determine which curve to use.
3. Plot the pressure and temperature on the TXV Charging Curve.
4. If the lines cross above the curve remove refrigerant, if below curve add refrigerant.
5. Whenever cha or added, the s be operated fo 20 minutes to additional mea be made.
6. When system charged refer Performance C charge and pe

WIRING DIAGRAM



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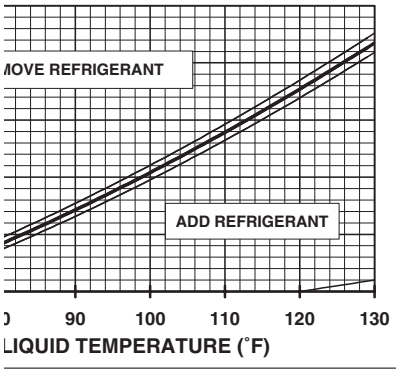
FIRST STAGE ONLY

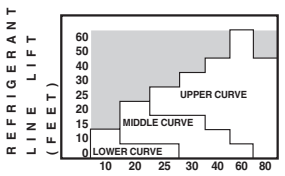
EFRIGERANT CHARGING CURVE

ng outdoor units with R-22 refrigerant at above 65˚F
emperature in cooling mode and with indoor TXV.



5. Whenever charge is removed or added, the system must be operated for a minimum 20 minutes to stabilize before additional measurements can be made.
6. When system is correctly charged refer to System Performance Curves to verify charge and performance.

CHARGING CURVE SELECTION CHART

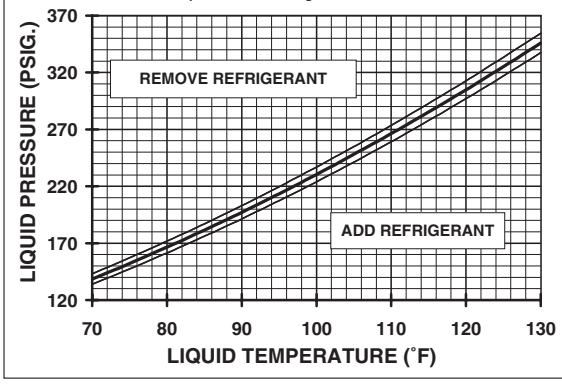


A150999P01 REV.1

FOR SECOND STAGE ONLY

TXV REFRIGERANT CHARGING CURVE

For charging outdoor units with R-22 refrigerant at above 65˚F outdoor temperature in cooling mode and with indoor TXV.



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4. If the lines cross above the curve remove refrigerant, if below curve add refrigerant.
5. Whenever charge is removed or added, the system must be operated for a minimum 20 minutes to stabilize before additional measurements can be made.
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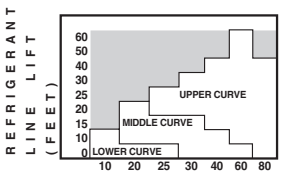
CHARGING CURVE SELECTION CHART



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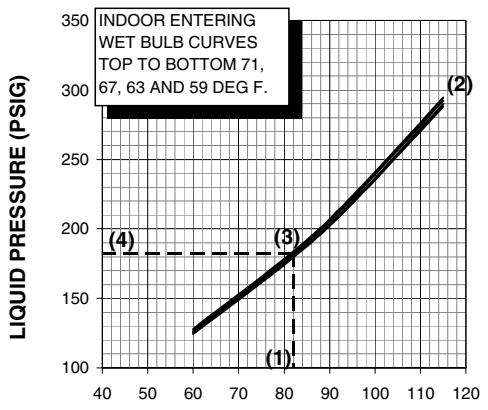
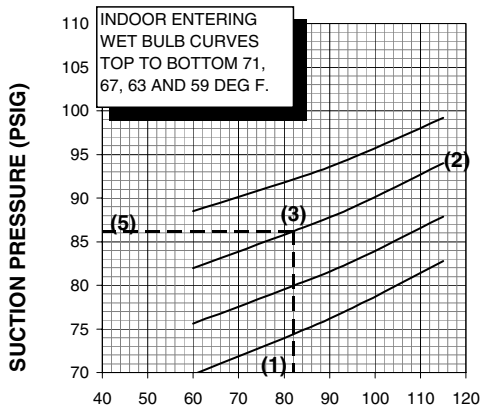
PRESSURE CURVES FOR 2TTZ9048B1000A

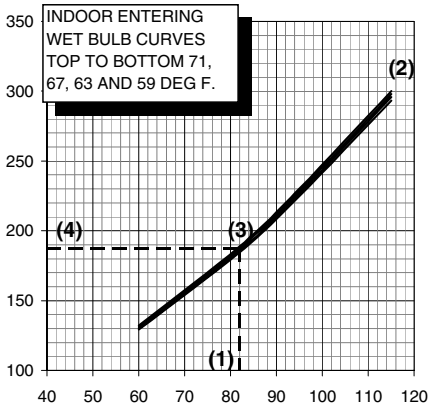
FIRST STAGE
TWE049E13
Cooling with Thermal Expansion Valve

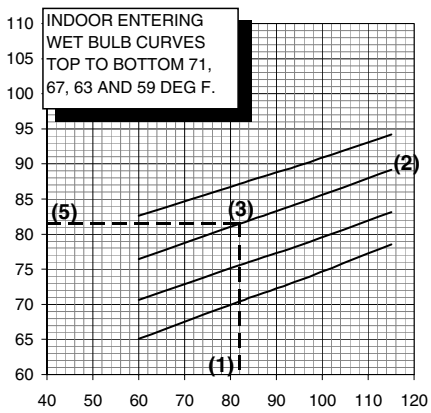




OUTDOOR TEMPERATURE (Degree F)

SECOND STAGE
TWE049E13
Cooling with Thermal Expansion Valve





OUTDOOR TEMPERATURE (Degree F)

COOLING PERFORMANCE CAN BE CHECKED WHEN THE OUTDOOR TEMP IS ABOVE 65 DEG F.

TO CHECK COOLING PERFORMANCE, SELECT THE PROPER INDOOR CFM, ALLOW PRESSURES TO STABILIZE. MEASURE INDOOR WET BULB TEMPERATURE, OUTDOOR TEMPERATURE, LIQUID AND SUCTION PRESSURES. ON THE PLOTS LOCATE OUTDOOR TEMPERATURE (1); LOCATE INDOOR WET BULB (2); FIND INTERSECTION OF OD TEMP. & ID W.B. (3); READ LIQUID (4) OR SUCTION (5) PRESSURE IN LEFT COLUMN .

EXAMPLE: FIRST STAGE
- (1) OUTDOOR TEMP. 82 F.
- (2) INDOOR WET BULB 67 F.
- (3) AT INTERSECTION
- (4) LIQUID PRESSURE @ 860 CFM IS 182 PSIG
- (5) SUCTION PRESSURE @ 860 CFM IS 86 PSIG

EXAMPLE: SECOND STAGE
- (1) OUTDOOR TEMP. 82 F.
- (2) INDOOR WET BULB 67 F.
- (3) AT INTERSECTION
- (4) LIQUID PRESSURE @ 1580 CFM IS 187 PSIG
- (5) SUCTION PRESSURE @ 1580 CFM IS 82 PSIG

INTERCONNECTING LINES
GAS - 1-1/8" O.D.
LIQUID - 3/8" O.D.

ACTUAL:
LIQUID PRESSURE SHOULD BE +/- 10 PSI OF CHART
SUCTION PRESSURE SHOULD BE +/- 3 PSIG OF CHART

DWG.NO. 2TTZ9048B1

FIRST STAGE
ALTERNATE INDOOR UNITS
COOLING WITH THERMAL EXPANSION VALVE

INDOOR UNIT	CFM	PRESSURE CURVE CORRECTION PSIG — COOLING — SUCT. PRESS	LIQUID PRESS
TU/DD100R9V5+TXC054S3	800	-4	-2
TU/DD120R9V5+TXC054S3	800	-4	-2
TU/DY100R9V4+TXC054S3	800	-4	-2
TU/DY120R9V5+TXC054S3	825	-4	-2
TU/DD100R9V5+TXH063P3	800	-1	-1
TU/DD120R9V5+TXH063P3	800	-1	-1
TU/DY100R9V4+TXH063P3	800	-1	-1
TU/DY120R9V5+TXH063P3	825	-1	0
TUD100R9V5+TXC065S3	800	-4	-1
TUD120R9V5+TXC065S3	800	-4	-1
TUD140R9V5+TXC065S3	800	-4	-1
TUD140R9V5+TXH063P3	800	-1	-1
TUY100R9V4+TXC065S3	800	-4	-1
TUY100R9V4+TXH063P3	800	-1	-1
TUY120R9V5+TXC065S3	800	-4	-1
TWE040E13	880	0	0
*TWE049E13	860	0	0

*BASE INDOOR UNIT(S) CURVES ON 2TTZ9048B1

SECOND STAGE
ALTERNATE INDOOR UNITS
COOLING WITH THERMAL EXPANSION VALVE

INDOOR UNIT	CFM	PRESSURE CURVE CORRECTION PSIG — COOLING — SUCT. PRESS	LIQUID PRESS
TU/DD100R9V5+TXC054S3	1620	-4	-3
TU/DD120R9V5+TXC054S3	1625	-4	-3
TU/DY100R9V4+TXC054S3	1630	-4	-3
TU/DY120R9V5+TXC054S3	1625	-4	-3
TU/DD100R9V5+TXH063P3	1600	0	0
TU/DD120R9V5+TXH063P3	1625	0	0
TU/DY100R9V4+TXH063P3	1650	0	0
TU/DY120R9V5+TXH063P3	1650	0	0
TUD100R9V5+TXC065S3	1650	-2	-1
TUD120R9V5+TXC065S3	1625	-2	-1
TUD140R9V5+TXC065S3	1600	-2	-1
TUD140R9V5+TXH063P3	1600	0	0
TUY100R9V4+TXC065S3	1640	-2	-1
TUY100R9V4+TXH063P3	1600	0	0
TUY120R9V5+TXC065S3	1600	-2	-1
*TWE049E13	1580	0	0

*BASE INDOOR UNIT(S) CURVES ON 2TTZ9048B1