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**

<table>
<thead>
<tr>
<th>OUTDOOR UNIT ① ②</th>
<th>4TWR5042E1000A</th>
</tr>
</thead>
<tbody>
<tr>
<td>POWER CONNS. — V/PH/HZ ①</td>
<td>208/230/1/60</td>
</tr>
<tr>
<td>MIN. BRCH. CIR. AMPACITY</td>
<td>27</td>
</tr>
<tr>
<td>BR. CIR. PROT. RTG. — MAX. (AMPS)</td>
<td>45</td>
</tr>
<tr>
<td>COMPRESSOR</td>
<td>CLIMATUFF®</td>
</tr>
<tr>
<td>NO. USED - NO. SPEEDS</td>
<td>1 - 1</td>
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<tr>
<td>VOLTS/PH/HZ</td>
<td>200/230/1/60</td>
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<tr>
<td>R.L. AMPS ① - L.R. AMPS</td>
<td>19.9 - 109</td>
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<td>FACTORY INSTALLED</td>
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</tr>
<tr>
<td>START COMPONENTS ①</td>
<td>NO</td>
</tr>
<tr>
<td>INSULATION/SOUND BLANKET</td>
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</tr>
<tr>
<td>COMPRESSOR HEAT</td>
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<td>OUTDOOR FAN</td>
<td>PROPELLER</td>
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<tr>
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<tr>
<td>NO. MOTORS - HP</td>
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<td>MOTOR SPEED R.P.M.</td>
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<tr>
<td>F.L. AMPS</td>
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<td>OUTDOOR COIL — TYPE</td>
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<tr>
<td>ROWS - F.PI.</td>
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<tr>
<td>FACE AREA (SQ. FT.)</td>
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<tr>
<td>TUBE SIZE (IN.)</td>
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<tr>
<td>REFRIGERANT</td>
<td>LBS. — R-410A (O.D. UNIT) ①</td>
</tr>
<tr>
<td>FACTORY SUPPLIED</td>
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<tr>
<td>LINE SIZE - IN. O.D. GAS ①</td>
<td>3/4</td>
</tr>
<tr>
<td>LINE SIZE - IN. O.D. LIQ. ①</td>
<td>3/8</td>
</tr>
<tr>
<td>CHARGING SPECIFICATION</td>
<td>SUBCOOLING</td>
</tr>
<tr>
<td>DIMENSIONS</td>
<td>H X W X D</td>
</tr>
<tr>
<td>WEIGHT</td>
<td>SHIPING (LBS.)</td>
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<tr>
<td>NET (LBS.)</td>
<td>277</td>
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</table>

**TUBING INFORMATION**

<table>
<thead>
<tr>
<th>Tubing Sizes</th>
<th>Tubing Length</th>
<th>Additional Refrigerant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suction</td>
<td>Liquid</td>
<td></td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>3/8&quot;</td>
<td>20'</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>3/8&quot;</td>
<td>30'</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>3/8&quot;</td>
<td>40'</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>3/8&quot;</td>
<td>50'</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>3/8&quot;</td>
<td>60'</td>
</tr>
</tbody>
</table>

Tubing lengths in excess of sixty (60) feet see application software.

① Certified in accordance with the Air-Source Unitary Air-conditioner Equipment certification program, which is based on AHRI standard 210/240.
② Rated in accordance with AHRI standard 270.
③ Calculated in accordance with Natl. Elec. Codes. Use only 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 60 ft.; Max. lift - Suction 60 ft.; Max lift - Liquid 60 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.

**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 GROUND. 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.

© 2010 Trane
Trane has always recommended installing Trane approved matched indoor and outdoor systems.

All Trane split systems are AHRI rated with only TXV indoor systems. The benefits of installing approved indoor and outdoor split systems are maximum efficiency, optimum performance and the best overall system reliability.

The following charging methods are therefore prescribed for systems with indoor TXVs.

1. Subcooling (in the cooling mode) is the only recommended method of charging above 55°F ambient temperatures.

2. For best results - the indoor temperature should be kept between 70°F to 80°F. Add system heat if needed.

3. At start-up, or whenever charge is removed or added, the system must be operated for a minimum twenty (20) minutes to stabilize before accurate measurements can be made.

4. Measure Liquid Line Temperature and Refrigerant Pressure at service valves.

5. Determine total refrigerant line length, and height (lift) if indoor section is above the condenser. Use the Subcool Charging Chart Corrections Table to calculate any additional subcooling required for your specific application.

6. Determine the Design Subcooling from the unit nameplate or Service Facts. Add any additional amount of subcooling calculated in Step 5 to the Design Subcooling to arrive at the final subcooling value.

7. Locate this value in the appropriate column of the R-410A Refrigerant Charging Chart. Locate your liquid line temperature in the left column of the chart, and the intersecting liquid line pressure under your calculated subcooling value column. Add refrigerant to raise the pressure to match the chart, or remove refrigerant to lower the pressure. Again, wait twenty (20) minutes for the system conditions to stabilize before adjusting charge again.

8. When system is correctly charged, you can refer to System Pressure Curves (in Service Facts) to verify typical performance.

### Subcooling Charging in Cooling Above 55°F OD Ambient

TDR relay cycles sump heat off during compressor operation and delays energizing the sump heat for 30 mins after “Y” call is removed.

---

**WARNING**

HAZARDOUS VOLTAGE!

DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE CONTROLS 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**

- BLACK W/BLUE MARKER
- ORANGE W/YELLOW MARKER
- BROWN W/WHITE FR/PURPLE

**COLOR OF MARKER**

- YL YELLOW
- BL BLUE
- RD RED
- GR GREEN

---

**FOR CANADIAN INSTALLATIONS**

POUR INSTALLATIONS CANADIENNES

**CAUTION:** NOT SUITABLE FOR USE ON SYSTEMS EXCEEDING 150V TO GROUND. ATTENTION: NE CONVIENT PAS AUX INSTALLATIONS DE PLUS DE 150 V À LA TERRE.

---

**SUBCOOL CHARGING CHART CORRECTIONS TABLE**

Use Design Subcooling

<table>
<thead>
<tr>
<th>Refrigerant Line Lift (ft)</th>
<th>Add 6°</th>
<th>Add 5°</th>
<th>Add 3°</th>
<th>Add 2°</th>
<th>Add 1°</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
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<tr>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**THERMOSTAT**

- Heat Controls
- A/C Controls
- 1 yr. Warranty

---

**NOTES:**

1. If ODT-B is not used, add jumper between W3 and W3 at air handler.
2. If used, ODT-B must be mounted remote of control box in an approved weatherproof enclosure.
3. Low Voltage 120 V / Field wiring must be 18 AWG, Min.

---

**SUBCOOL CHARGING CHART**

Use Design Subcooling

---

**TOTAL REFRIGERANT LINE LENGTH (FT)**

10 20 30 40 50 60

---

**REFRIGERANT LINE LIFT (FT)**

0 10 20 30 40 50 60
SUBCOOLING CHARGING
BELOW 55°F OD AMBIENT – IN HEATING ONLY

1. The Subcool Charging Method in cooling is not recommended below 55°F outdoor ambient.
2. The only recommended method of charging at outdoor ambient below 55°F is to weigh in the charge in the heating mode.
3. Use Nameplate charge plus standard charge adders for line length.
4. Check liquid line temperature and pressure (at the OD valves) to obtain a minimum of 10°F subcooling.
5. Add charge if minimum of 10°F subcooling is not obtained with the nameplate charge plus line length correction.
6. It is important to return in the spring or summer to accurately charge the system in the cooling mode at outdoor ambient above 55°F.

R-410A REFRIGERANT CHARGING CHART

<table>
<thead>
<tr>
<th>LIQUID TEMP (°F)</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
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<tr>
<td>LIQUID GAGE PRESSURE (PSI)</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>55</td>
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<td>520</td>
<td>527</td>
<td>533</td>
</tr>
</tbody>
</table>

Refer to Service Facts or Installer’s Guide for charging method.
Defrost controls have a selectable termination temperature. Cutting jumper J2 (shown below) will achieve a termination temperature of 70°F when the ambient temperature is below 30°F (see table at left).

### Defrost Termination Temperatures

<table>
<thead>
<tr>
<th>Outdoor Temperature</th>
<th>Termination Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;22°F</td>
<td>47°F</td>
</tr>
<tr>
<td>10°F–22°F</td>
<td>ODT + 25°F</td>
</tr>
<tr>
<td>6°F–10°F</td>
<td>35°F</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>All</th>
<th>&lt; 6°F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12 min. or 35°F every 3 hrs.</td>
</tr>
</tbody>
</table>

### Troubleshooting Outdoor TXV / Heating Mode

**Before starting**, insure proper fan motor operation and both indoor and outdoor coils are clean and clear of ice.

Measure sub-cooling at the outdoor unit. Is sub-cooling greater than 8°F?

**YES**

Is outdoor ambient above 55°F?

**YES**

**Stop.** Outdoor ambient is too warm for this test.

**NO**

Verify system charge using Service Facts

Is outdoor ambient above 55°F?

**NO**

Measure superheat on suction line at TXV sensing bulb. Is superheat over 6°F and under 20°F?

**NO**

Measure liquid pressure and suction pressure while holding the bulb in bare hand for one minute. Does liquid pressure decrease and suction pressure increase?

**YES**

Replace the TXV

**NO**

Remove sensing bulb from the suction line. Observe liquid pressure and suction pressure while holding the bulb in bare hand for one minute. Does liquid pressure decrease and suction pressure increase?

**YES**

TXV is OK

**NO**
Compressor fails to start
Contactor check

Is contactor energized?
(contacts closed)

YES → Go To: Compressor won't run
NO → Check for 24 volts AC across contactor coil

Is voltage present at contactor coil?

YES → Replace contactor
NO → Check control transformer and control fuse

Is the control transformer and fuse good?

YES → Jumper R to Y low voltage terminals at thermostat sub base.
NO → Repair or replace transformer or fuse. Investigate cause for failure (possible short in field wiring)

Does the contactor energize?

YES → Replace the room thermostat
NO → Repair or replace connecting wiring

---

**Single Pole Contactor (MS)**

```
IN  HIGH VOLTAGE

        L1  L2
        T1
        T2
```

**Double Pole Contactor (MS)**

```
IN  HIGH VOLTAGE

        L1  L2
        T1
        T2
```

*Refer to Wiring Diagram to determine if a single pole or double pole contactor is used.*
Compressor won't run
Contactor is closed

Check for high voltage to contactor

Is high voltage present at T1 and T2? 

YES

Check for open IOL (Internal Overload) 
Check resistance of C to S and C to R

Does the resistance check show an open circuit from C to S or C to R?

YES

Allow compressor time to cool and re-test

NO

Check for open windings.

Does a resistance check show an open circuit between R and S?

YES

Replace the compressor

NO

Check for locked rotor

Is voltage present at C to S and C to R with locked rotor amps on C?

YES

Check Start-Capacitor and Relay (if present) and Run Capacitor

NO

Check wiring to compressor C, S and R

Do the start components and run capacitor check good?

YES

Replace the compressor

NO

Replace start components and/or run capacitor
PRESSURE CURVES FOR 4TWR5042E1000A

4TEE3F65B1
Cooling with Thermal Expansion Valve

4TEE3F65B1
Heating

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

TO CHECK COOLING PERFORMANCE, SELECT THE PROPER OUTDOOR CFM, ALLOW PRESSURES TO STABILIZE. MEASURE INDOOR WET BULB TEMPERATURE, OUTDOOR TEMPERATURE, DISCHARGE 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 DISCHARGE OR SUCTION PRESSURE IN LEFT COLUMN (4).

EXAMPLE: (1) OUTDOOR TEMP. 82 F.
(2) INDOOR WET BULB 67 F.
(3) AT INTERSECTION
(4) DISCHARGE PRESSURE @ 1445 CFM IS 321 PSIG
(5) SUCTION PRESSURE @ 1445 CFM IS 139 PSIG

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

INTERCONNECTING LINES
GAS - 3/4" O.D.
LIQUID - 3/8" O.D.

DWG.NO. 4TWR5042E1