

INSTALLATION INSTRUCTIONS FOR FREEZESTAT KIT (91W70) USED WITH TAA SERIES UNITS

RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause personal injury, loss of life, or damage to property.
Installation and service must be performed by a licensed professional installer (or equivalent) or a service agency.

⚠ CAUTION

Physical contact with metal edges and corners while applying excessive force or rapid motion can result in personal injury. Be aware of, and use caution when working near these areas during installation or while servicing this equipment.

⚠ WARNING



Electric Shock Hazard. Can cause injury or death.
Line voltage is present at all components on units with single-pole contactors, even when unit is not in operation!
Unit may have multiple power supplies. Disconnect all remote electric power supplies before opening access panel.
Unit must be grounded in accordance with national and local codes.

Shipping and Packing List

Check parts for shipping damage; if any damage is found, immediately contact the last shipping carrier.

Package 1 of 1 contains the following:

- 2 - Freezestats (S49 and S50)
- 2 - Wire harnesses (short harness only used on older units without the 24VAC terminal on TB1)
- 10 - Wire ties
- 1 - Wiring diagram (only used on older units without the 24VAC terminal on TB1)

Application

The freezestat kit, catalog number 91W70 (part number 609359-01) provides protection from icing of the evaporator coil by interrupting cooling operation when coil temperature drops below 29°F. Operation resumes when coil temperature rises to 58°F.

Hardware Installation

1. Disconnect all power to the unit and open panels to gain access to the control box and to the blower compartment where the evaporator is located
2. Systems with one compressor (single stage system) use one freezestat (S49). Systems with two compressors (dual-stage systems) use two freezestats (S49 and S50)
3. Attach one freezestat as illustrated in figure 1 to each refrigerant circuit. Locate freezestat on evaporator coil piping, somewhere near the mid-point of the circuit as illustrated in figure 2.

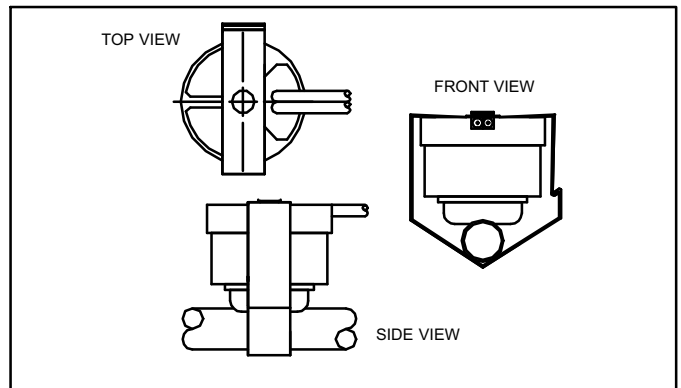


Figure 1. S49/S50 Freezestats

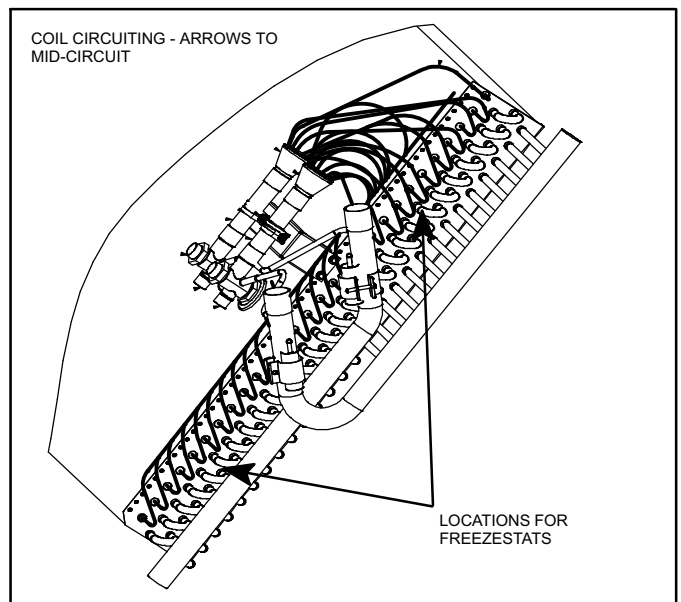


Figure 2. Freezestat Mounting Locations



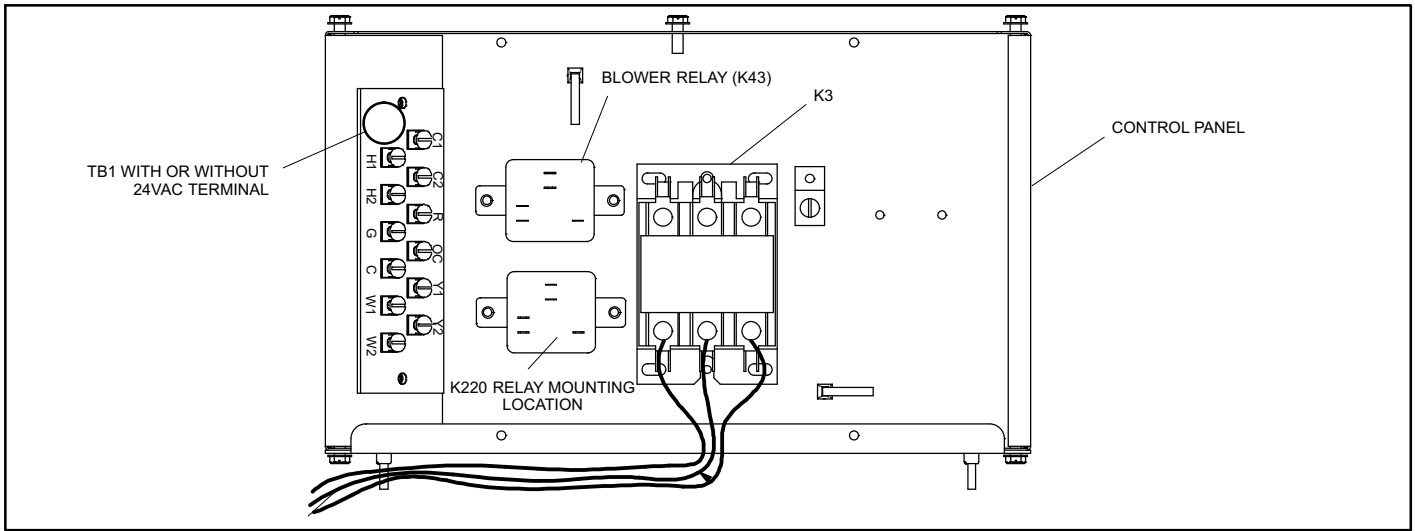


Figure 3. Typical TAA Control Panel (K220 Relay Mounting Position)

Electrical Installation

Before proceeding it must be determined whether there is a 24VAC terminal on the TB1 terminal board (see figure 3 for location if present). There are two electrical installation sections, one for units with a TB1 24VAC terminal and one without.

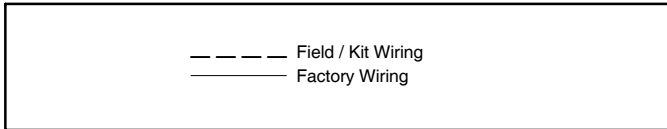


Figure 4. Wiring Symbols

ELECTRICAL INSTALLATION - UNITS WITH TB1 24VAC TERMINAL

1. Disconnect all power to unit
2. Use the wire harness provided to connect the freezestat(s) to the control circuit (see figure 10).
3. **Installing Freezestat Kit (S49/S50) Only**

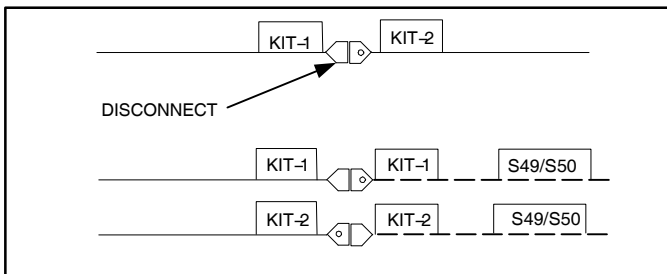


Figure 5. Installing Freezestat Kit Only

- 3.1. Locate pink wires marked **KIT-1** and **KIT-2** (quick connect) in the control box and disconnect from each other.
- 3.2. Make wiring connections as illustrated in figure 5 using harness provided in kits
 - 3.2.1. Connect factory wire marked **KIT-1** to kit harness wire marked **KIT-1**.
 - 3.2.2. Connect factory wire marked **KIT-2** to kit harness wire marked **KIT-2**.

4. **Installing Freezestat Kit (S49/S50) when using a Float Switch Kit (S149)**

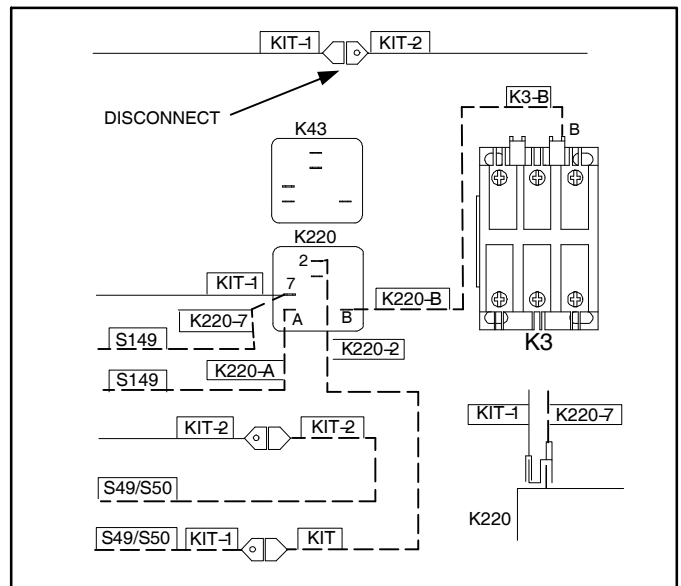


Figure 6. Installing both Freezestat and Float Switch Kits

- 4.1. Locate pink wires marked **KIT-1** and **KIT-2** (quick connect) in the control box and disconnect from each other.
- 4.2. Make wiring connections as illustrated in figure 6 using harnesses provided in kits.
 - 4.2.1. Start with connecting wire marked **K220-7** from the float switch kit harness to relay **K220** terminal -7.
 - 4.2.2. Connect factory wire marked **KIT-1** to float switch kit harness wire marked **K220-7** receptacle / tab combination that was just connected to the relay in step 4.2.1. (see figure 6).
 - 4.2.3. Connect the float switch kit harness wire marked **KIT** to the freezestat kit harness wire marked **KIT-1**.
 - 4.2.4. Connect the factory wire marked **KIT-2** to the freezestat kit harness wire marked **KIT-2**.

4.2.5. Make all other wiring connections as illustrated in figure 6 and per wire markings.

5. Installing Freezestat Kit (S49/S50) when using an Variable Frequency Drive (VFD) Kit

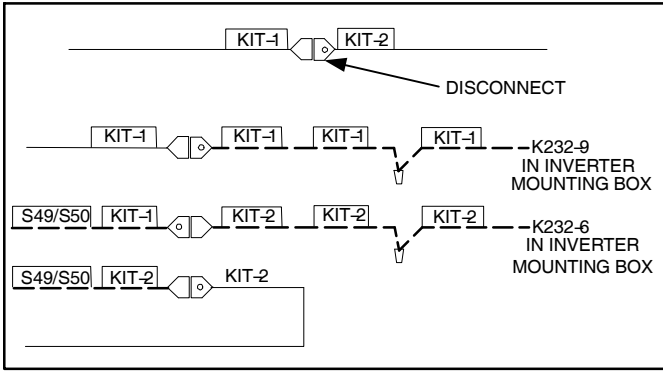


Figure 7. Installing both Freezestat and VFD Kits

5.1. Locate pink wires marked **KIT-1** and **KIT-2** (quick connect) in the control box and disconnect from each other.

5.2. Make wiring connections as illustrated in figure 7 using kit provided harnesses.

5.2.1. Connect wire from VFD kit marked **KIT-1** to factory wire marked **KIT-1**.

5.2.2. Connect wire from VFD kit marked **KIT-2** to freezestat kit harness wire marked **KIT-1**.

5.2.3. Connect the freezestat kit harness wire marked **KIT-2** to the factory wire marked **KIT-2**.

5.2.4. Make all other wiring connections as illustrated in figure 7 and per wire markings. In addition, see wiring diagram provided with VFD kit.

6. Installing Freezestat Kit (S49/S50) when using both Float Switch (S149) and VFD Kits

6.1. Locate pink wires marked **KIT-1** and **KIT-2** (quick connect) in the control box and disconnect from each other.

6.2. Make wiring connections as illustrated in figure 8 using kit provided harnesses.

6.2.1. Connect wire from VFD kit marked **KIT-1** to factory wire marked **KIT-1**.

6.2.2. Connect wire marked **K220-7** from the float switch kit harness to relay **K220** terminal -7.

6.2.3. Connect wire from VFD kit marked **KIT-2** to float switch kit harness wire marked **K220-7** receptacle/tab combination that was just connected to the relay in step 6.2.2. (see figure 8).

6.2.4. Connect the float switch kit harness wire marked **KIT** to the freezestat kit harness wire marked **KIT-1**.

6.2.5. Connect the freezestat kit harness wire marked **KIT-2** to the factory wire marked **KIT-2**.

6.2.6. Make all other wiring connections as illustrated in figure 8 and per wire markings. In addition, see wiring diagram provided with VFD kit.

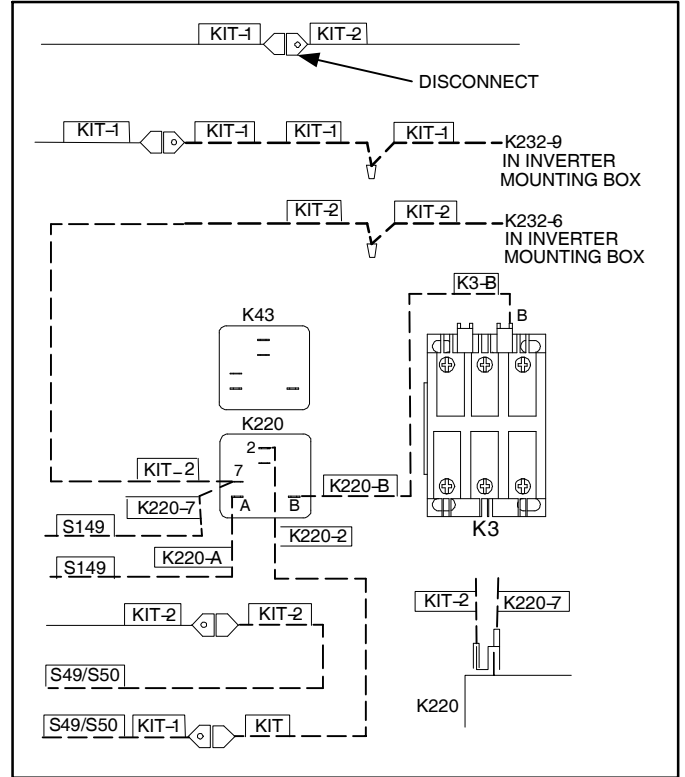


Figure 8. Installing Float Switch, VFD and Freezestat Kits

ELECTRICAL INSTALLATION - UNITS WITHOUT TB1 24VAC TERMINAL

Older units that are not equipped with a 24VAC terminal on the TB1 terminal board require the addition of a harness in order to connect the accessory kit. In addition to the new harness a change to the 24VAC power supply wiring connection must be made. Use the following procedure and figure 9 to make the necessary changes.

1. Disconnect all power to unit.
2. **Add the Accessory Connection Harness**
 - 2.1. Remove the **TB1** terminal board from the control panel and disconnect the pink wire attached to the **R** terminal on the rear side of the terminal board. Cut the terminal off the wire and strip wire.
 - 2.2. Connect the 24VAC power supply wire coming from the outdoor unit to the pink wire marked **TB1-R** that was just removed using kit provided wire nut. Secure wire nut connection with electrical tape (not provided).
 - 2.3. Disconnect the factory wire marked **K43-5** from the **K43** relay and connect to the short kit harness wire marked **K43-5**.
 - 2.4. Connect the other short kit harness wires marked **K43-5** to the **K43** relay.
 - 2.5. Connect the short kit harness wire marked **TB1-R** to the **TB1** terminal board.
 - 2.6. Re-attach the **TB1** terminal board to the control panel.
 - 2.7. Replace existing wiring diagram with kit provided diagram.
 - 2.8. Refer to the procedures listed under **Electrical Installation - Units with TB1 24VAC Terminal** section, paragraphs 1, 2, 3 and 4 depending on the accessories being installed to continue the installation process.

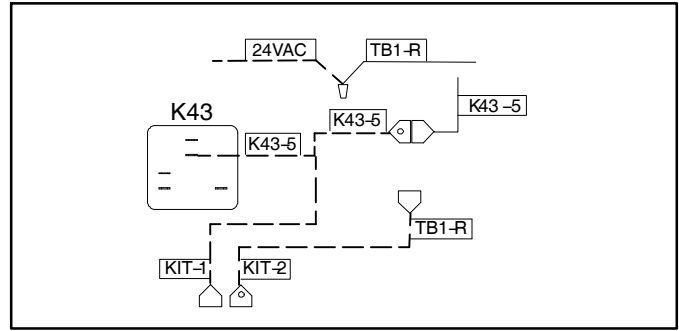


Figure 9. Units without TB1 24VAC Terminal
FREEZESTAT CONNECTIONS

1. **For Single-Stage Units:** Connect both pink harness wires to freezestat (S49) per labels printed on the wires.
For Dual-Stage Units: Connect one pink harness wire to each freezestat (S49 and S50) per labels printed on the wires.
2. **For Single-Stage Units:** Shorter blue wire is not used.
For Dual-Stage Units: Use the shorter blue wire to interconnect the freezestats per the wire labels.
3. Verify that the modified control circuit is in accordance with the TAA wiring diagram as illustrated in figure 11 or 12.
4. Use the wire ties included in the kit to secure installed wires away from moving parts, sharp edges and hot components.
5. Replace all access panels and restore power to the unit.

NOTE - When only one freezestat (S49) is required, connect both pink wires to S49. The blue wire is not used in this application.

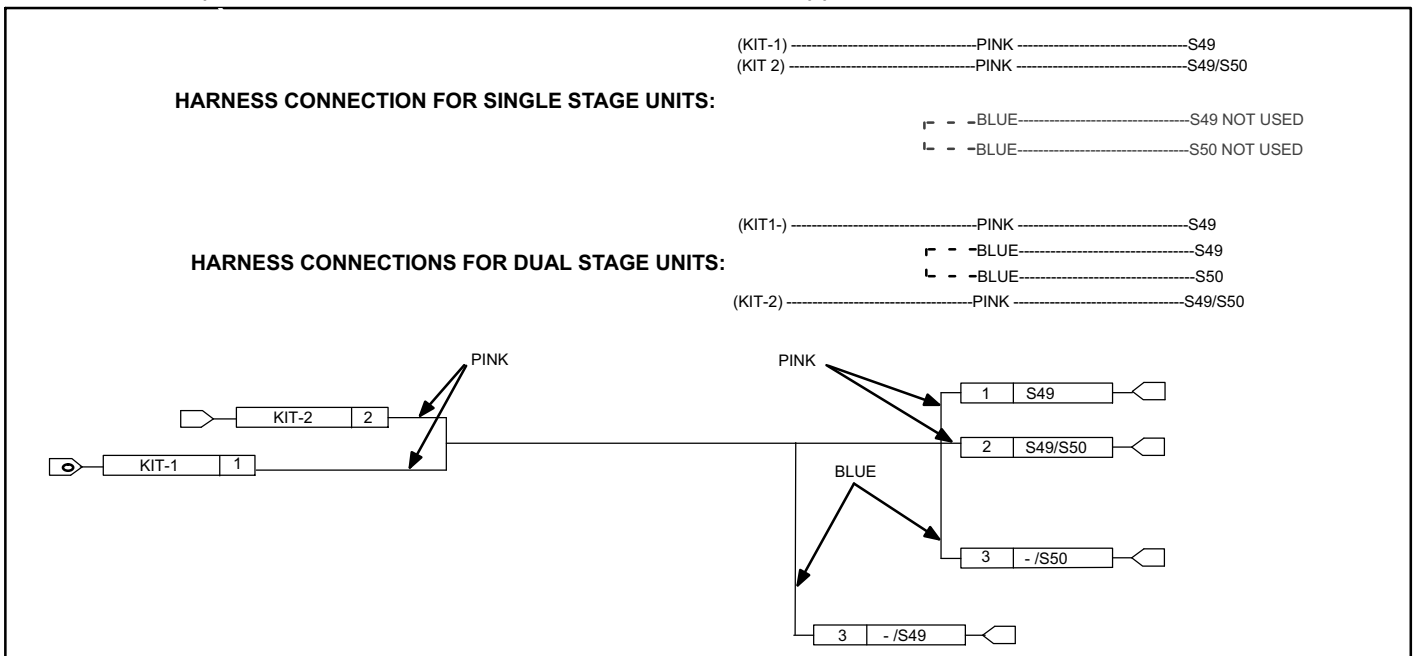
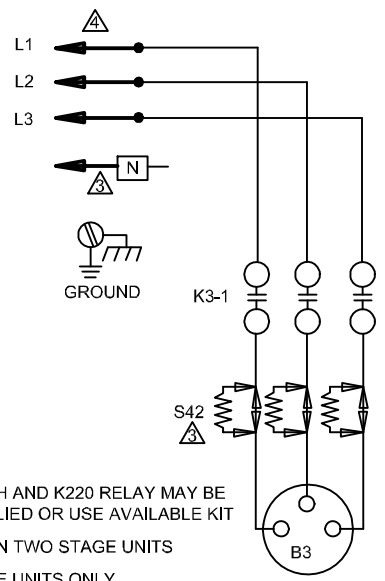
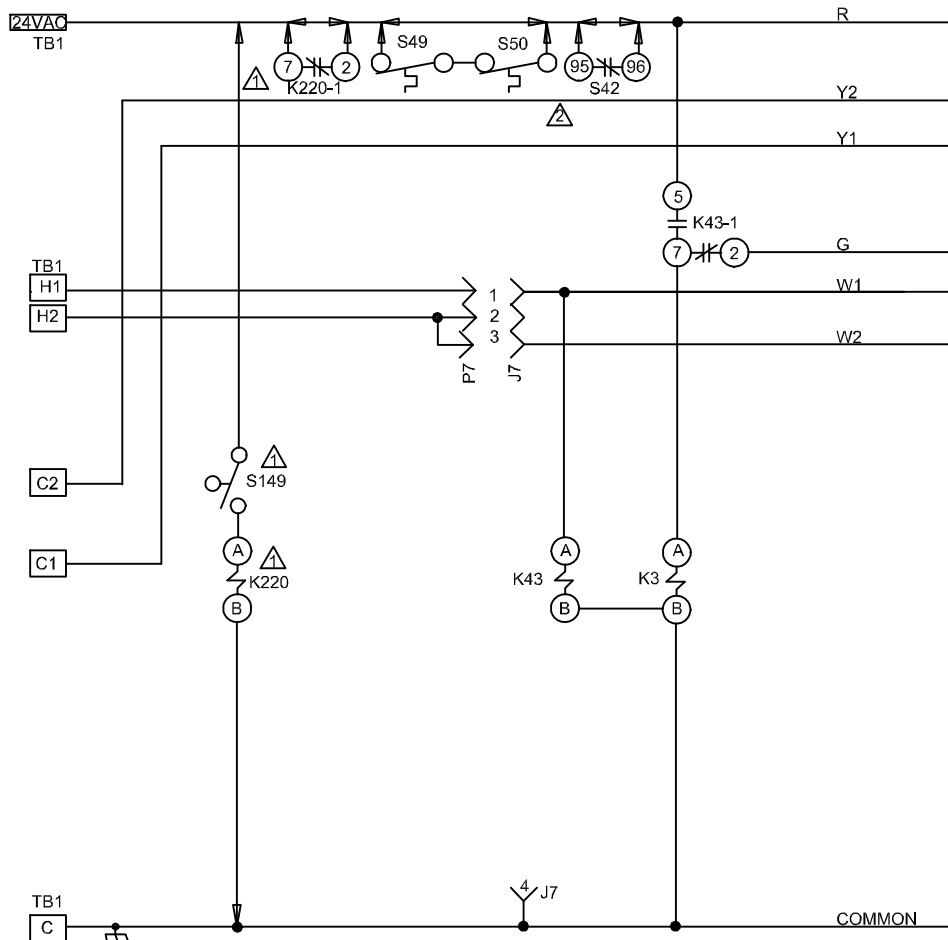


Figure 10. Control Panel and Wiring



KEY	COMPONENT
B3	MOTOR-BLOWER
J7	JACK-ELECT HT SUB-BASE KIT
K3,-1	RELAY-BLOWER
K43,-1	RELAY-ECONOMIZER BLOWER
K220,-1	RELAY-OVERFLOW
P7	PLUG -ELECT HT SUB-BASE KIT
S42	RELAY-OVERLOAD,BLOWER MTR
S49	SWITCH-FREEZESTAT COMPRESSOR 1
S50	SWITCH-FREEZESTAT COMPRESSOR 2
S149	SWITCH-OVERFLOW
TB1	TERMINAL STRIP-CLASS II VOLT

IF ANY WIRE IN THIS APPLIANCE IS REPLACED, IT MUST BE REPLACED WITH WIRE OF LIKE SIZE, RATING, INSULATION THICKNESS AND TERMINATION

WARNING-ELECTRIC SHOCK HAZARD, CAN CAUSE INJURY OR DEATH. UNIT MUST BE GROUNDED IN ACCORDANCE WITH NATIONAL AND LOCAL CODES

DISCONNECT ALL POWER BEFORE SERVICING

← DENOTES OPTIONAL COMPONENTS

- ⚠ S149 SWITCH AND K220 RELAY MAY BE FIELD SUPPLIED OR USE AVAILABLE KIT
- ⚠ S50 USED ON TWO STAGE UNITS
- ⚠ "M" VOLTAGE UNITS ONLY
- ⚠ FOR USE WITH COPPER CONDUCTORS ONLY


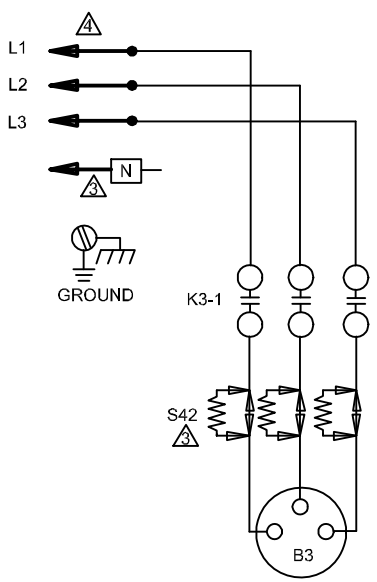
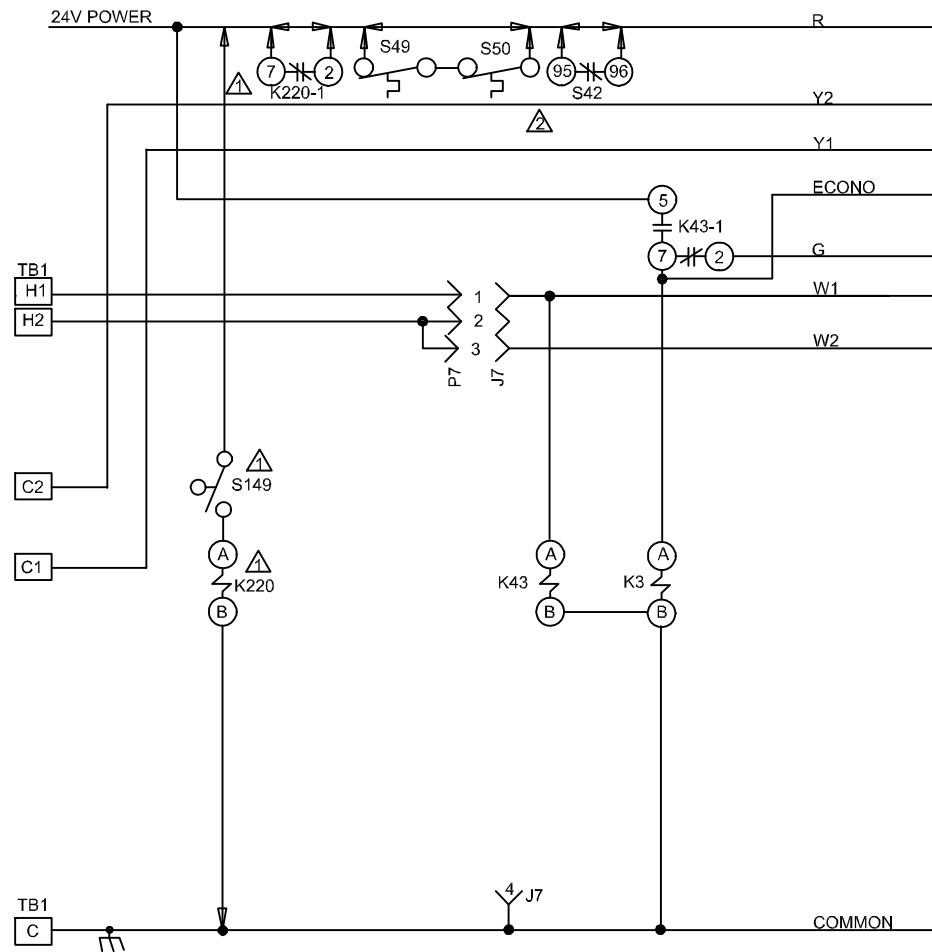
WIRING DIAGRAM		01/12
01/12		537529-01
BLOWER		
TAA 072 - 240 - G,J,M,Y		
SECTION B1		REV 0
Supersedes	New Form No.	
535,769W	537529-01	

Figure 11. Units with 24VAC Terminal on TB1



KEY	COMPONENT
B3	MOTOR-BLOWER
J7	JACK-ELECT HT SUB-BASE KIT
K3,-1	RELAY-BLOWER
K43,-1	RELAY-ECONOMIZER BLOWER
K220,-1	RELAY-OVERFLOW
P7	PLUG - ELECT HT SUB BASE KIT
S42	RELAY-OVERLOAD,BLOWER MTR
S49	SWITCH-FREEZESTAT COMPRESSOR 1
S50	SWITCH-FREEZESTAT COMPRESSOR 2
S149	SWITCH-OVERFLOW
TB1	TERMINAL STRIP-CLASS II VOLT

IF ANY WIRE IN THIS APPLIANCE IS REPLACED, IT MUST BE REPLACED WITH WIRE OF LIKE SIZE, RATING, INSULATION THICKNESS AND TERMINATION

WARNING-ELECTRIC SHOCK HAZARD, CAN CAUSE INJURY OR DEATH. UNIT MUST BE GROUNDED IN ACCORDANCE WITH NATIONAL AND LOCAL CODES

DISCONNECT ALL POWER BEFORE SERVICING

← DENOTES OPTIONAL COMPONENTS

- ⚠ S149 SWITCH AND K220 RELAY MAY BE FIELD SUPPLIED OR USE AVAILABLE KIT
- ⚠ S50 USED ON TWO STAGE UNITS
- ⚠ "M" VOLTAGE UNITS ONLY
- ⚠ FOR USE WITH COPPER CONDUCTORS ONLY

01/12	WIRING DIAGRAM	01/12
537530-01		
BLOWER		
TAA 072 - 240 - G,J,M,Y		
SECTION B1		REV 0
Supersedes	New Form No.	
	537530-01	

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Figure 12. Units without 24VAC Terminal on TB1