

# Installer's Guide

## 16 SEER Time Delay Relay Kit SOV Field Fix KIT15152

ALL phases of this installation must comply with NATIONAL, STATE AND LOCAL CODES

**IMPORTANT**—This Document is **customer property** and is to remain with this unit. Please return to service information pack upon completion of work.

### ⚠ WARNING

#### Hazardous Voltage w/Capacitors!

Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. For variable frequency drives or other energy storing components provided by Trane or others, refer to the appropriate manufacturer's literature for allowable waiting periods for discharge of capacitors. Verify with an appropriate voltmeter that all capacitors have discharged. Failure to disconnect power and discharge capacitors before servicing could result in death or serious injury.

### OVERVIEW:

The relay installation detailed in this kit is the manufacturer-approved correction which supersedes the temporary fix originally mentioned in alert SSP-SVA11B-EN. KIT15152 makes the switchover valve change no longer necessary.

### INSTALLATION:

**IMPORTANT: DEFROST CONTROL BOARD C140501G48 (CNT05004) IS REQUIRED FOR THIS KIT TO OPERATE PROPERLY.**

1. Turn off unit power.
2. Remove access panels from electrical controls and service valve areas.

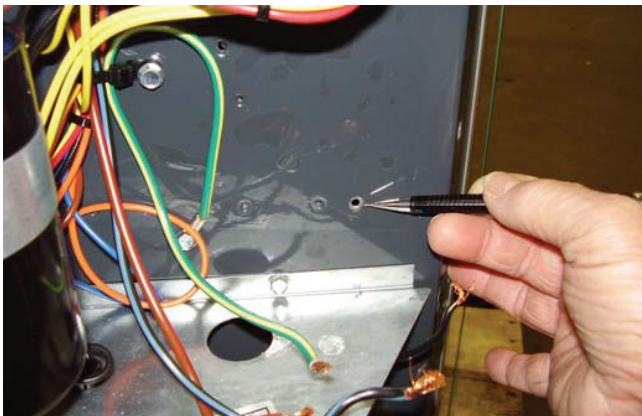


Figure 1 - Location of hole

### ⚠ WARNING

**RISK OF ELECTRIC SHOCK:** These servicing instructions are for use by qualified personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in these operating instructions unless you are qualified to do so.

### ⚠ WARNING

This information is for use by individuals having 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.

3. Locate dimpled hole in panel as shown in Figure 1.
4. Using the self tapping 10 x 1 1/4" screw supplied with the kit, secure the Time Delay Relay by inserting the screw through the mounting hole in the center of the relay and into the dimpled hole shown below. (screw gun required)
5. Pull the Yellow/Red wire and RED wire through the low voltage access holes and using existing wire nuts connect to the Yellow/Red Y2 and the RED low voltage connections as per the wiring diagram in Figure 3.
6. Referring to the wiring diagram in Figure 3, attach the wires to the time delay relay as follows with the wires provided in the kit:
  - Blue wire to the negative terminal (#2);
  - Yellow wire to + terminal (#1);
  - Yellow/Red wire to the (NO) terminal and RED wire to (C).
7. Remove one Blue wire from the left terminal of the Compressor Contactor coil and attach new wire to terminal and existing wire to the piggy back spade on new Blue wire.
8. Attach the Yellow wire to the right side compressor contactor coil empty spade connection.

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- The Defrost Control board must be C140501G48 for this kit to operate properly. If the unit is not equipped with this Defrost Control board, replace the existing Defrost Control board with Part Number CNT05004 (C140501G48).

**Note: T1 is not available on the new board, secure and tape off the Brown wire.**

- Secure all wiring using the wire tie provided.
- Attach wiring diagram addendum beside the unit wiring diagram inside control panel box cover.
- Turn unit power on, wait 2 minutes, then operate unit for 10 minutes. (Results of a miswiring condition may take as long as 90 to 120 seconds to appear.)
- Initiate defrost cycle to confirm proper operation according to "Defrost Operation" page 2.
- Verify correct operation through the complete defrost sequence and then return to normal heating or cooling function.
- Reinstall and secure all panels.

## Time Delay Sequence of Operation

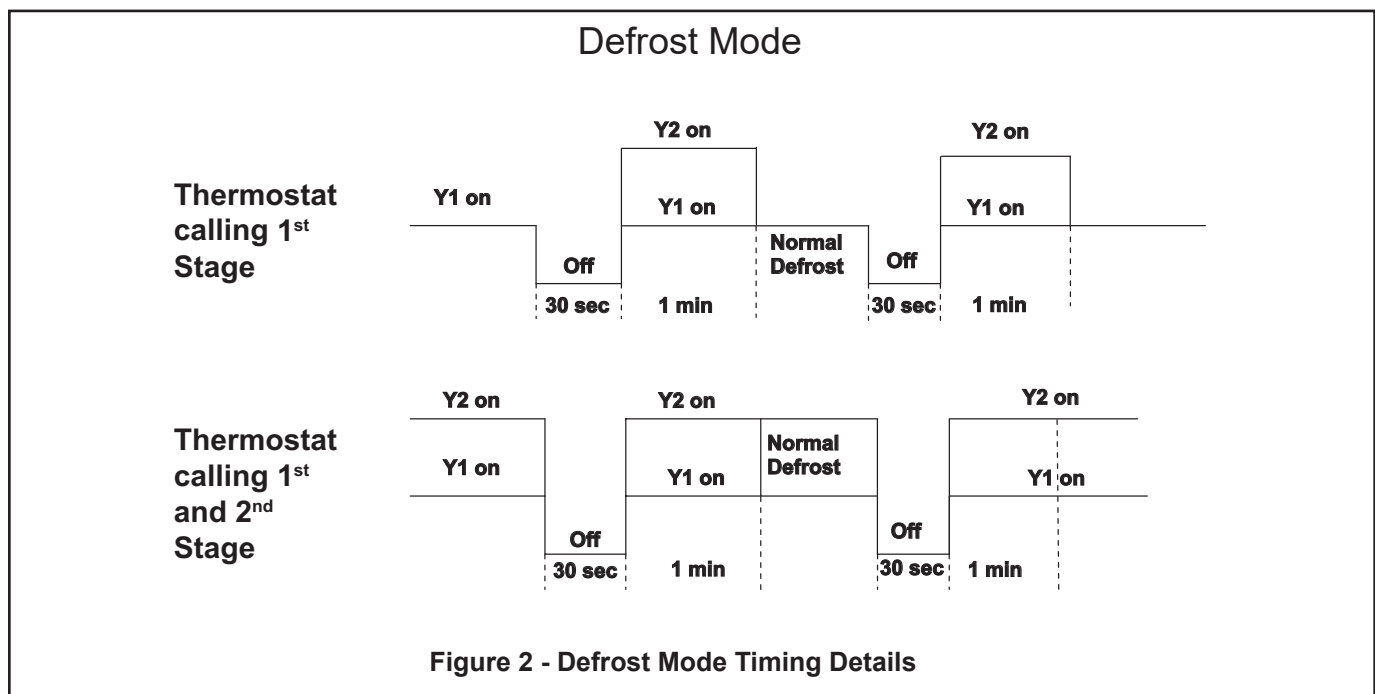
The addition of this relay is the manufacturer-approved correction which supersedes the temporary fix originally mentioned in alert SSP-SVA11B-EN. KIT15152 makes the switchover valve change no longer necessary. The intent of the relay is to energize the Y2 circuit for full compressor capacity which ensures that the switchover valve will have sufficient pressure differential to fully switch on a call for defrost.

To accomplish this function, this time delay device is powered by the contactor control circuit. Whenever 24 volt is applied to close the compressor contactor, both the (Y1 and Y2) 2nd stage circuits are energized for one minute. After one minute, the time delay will open the (Y2) 2nd stage circuit and the thermostat will resume control. Therefore in normal cooling or heating operation on a Y1 call, the compressor will operate for 1 minute on 2nd stage, then revert back to 1st stage.

## Defrost Operation

The replacement defrost control board reflects the addition of a 30-second period at the initiation of defrost action where the compressor contactor will open. This allows all pressures to equalize as shown in Figure 2 below. At the beginning and end of each defrost cycle, the defrost control will open the 24 volt circuit to the contactor for 30 seconds.

When the control re-applies power to the contactor, this activates the timing circuit of the time delay relay so that both (Y1 and Y2) 1st and 2nd stages energize for the first minute of defrost. Then the relay contacts open the 24 volt signal to the (Y2) 2nd stage circuit and defrost continues allowing the thermostat to control the Y1 & Y2 call until temperature sensors signal the defrost control to end the defrost. The defrost control then opens the 24 volt circuit to the compressor contactor for 30 seconds. At the end of the 30 seconds, 24 volts are then reapplied to the contactor and (Y1 and Y2) 1st and 2nd stages are energized for 1 minute. At the end of the 1 minute, the time delay relay will open the 24 volt circuit to (Y2) 2nd stage and normal operation continues allowing the thermostat to resume control.





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