Field Replacement Comfort Alert / CoreSense Module Kit

INSTALLATION INSTRUCTIONS

⚠ WARNING:

ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD

Failure to follow safety warnings exactly could result in serious injury or property damage.

Improper servicing could result in dangerous operation, serious injury, death or property damage.

- **Before servicing, disconnect all electrical power to the equipment.**
- **When servicing controls, label all wires prior to disconnecting. Reconnect wires correctly.**
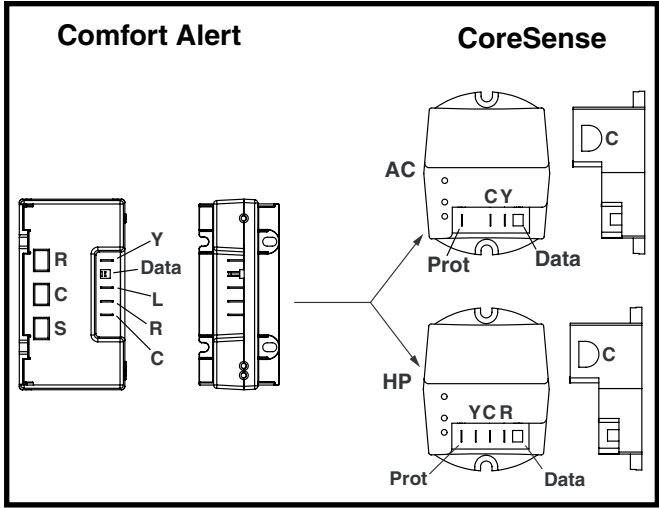- **Verify proper operation after servicing."**

Figure 1. Comfort Alert and CoreSense

ABOUT THE KIT

CoreSense™ Diagnostics is a breakthrough innovation for troubleshooting residential air-conditioning and heat pump systems. The CoreSense Diagnostics module is easily installed in the unit electrical panel near the compressor contactor. By using the compressor as a sensor, CoreSense Diagnostics helps the service technician more accurately troubleshoot system and compressor fault conditions. See Figure 1.

CoreSense Diagnostics also provides compressor and system protection through its proprietary lockout feature. Depending on the severity and frequency of the fault that caused the trip condition, the CoreSense Diagnostics module can lockout the compressor contactor to prevent damage to the compressor and system components. Less severe fault conditions resulting in an occasional trip will not result in a lockout condition.

Flashing LEDs communicate ALERT and LOCK codes to the service technician.

⚠ WARNING:

This kit must be installed by a qualified service technician in accordance with these instructions and all codes having jurisdiction. Failure to follow these instructions could result in possible damage to equipment, serious personal injury, or death.

ALERT CODE	ALERT CONDITION	LOCK LEVEL	LOCK INDICATION
Normal Run Solid Yellow	Normal operation, no trip.	N/A	N/A
Code 1 Yellow Flash 1	Long run time. Compressor is on running for more than 18 hours. (Code1 is disabled in Heat Pump mode.)	N/A	N/A
Code 2 Yellow Flash 2	Compressor (pressure) trip. Compressor runs for 12 sec to 15 min followed by a compressor trip condition lasting longer than 7 min.	4x consecutive	Red: Flash 2 Yellow: Off
Code 3 Yellow Flash 3	Pressure switch cycling. Compressor runs for 12 sec to 15 min followed by a compressor trip lasting between 35 sec to 7 min.	4x consecutive or 10x total	Red: Flash 3 Yellow: Off
Code 4 Yellow Flash 4	Locked rotor. Compressor trips within a compressor run time of 12 sec and does not start within 35 sec.	10x consecutive	Red: Flash 4 Yellow: Off
Code 5 Yellow Flash 5	Compressor (moderate run) trip. Compressor runs for 15 min to 18 hrs followed by a compressor trip lasting longer than 7 min.	4x consecutive or 10x total	Red: Flash 5 Yellow: Off
Code 9 Red Flash 9	The current to the PROT terminal is greater than 2A.	Current >2A for 40ms	Red: Flash 9 Yellow: Off
Trip Solid Red	Demand is present, but compressor is not running.	N/A	N/A

Table 1. LED Flash Code Troubleshooting Reference Table

REPLACING COMFORT ALERT WITH CORESENSE ON AN AC APPLICATION

1. Remove all wires from the Comfort Alert, including wires that run through the comfort alert sensing holes. See Figure 2.

2. Reconnect the Run and Start wires from the compressor to their original connections. The Run (yellow) wire should connect to the "T1" of the contactor. The Start (Red) wire should connect to the "H" terminal of the capacitor. See Figure 3.

3. Feed the Common (black) wire of the compressor through the sensing hole of the new CoreSense. Then reconnect the terminal to "T2" of the contactor.

4. Reconnect the yellow wire from the coil of the contactor to the "Y" terminal on the CoreSense. Also reconnect the "Y" signal wire from the thermostat to the "Y" on the CoreSense.

5. On the CoreSense for the AC, there is no longer an "R" connection. This wire is no longer needed.

6. Reconnect the "C" wire from the thermostat to the "C" terminal on the CoreSense. This is the only wire that connects to the "C" terminal on the CoreSense.

7. Connect the Yellow/Black wire from the Pressure Switch to the "P" terminal on the CoreSense. This is the only wire that connects to the "P" terminal on the CoreSense.
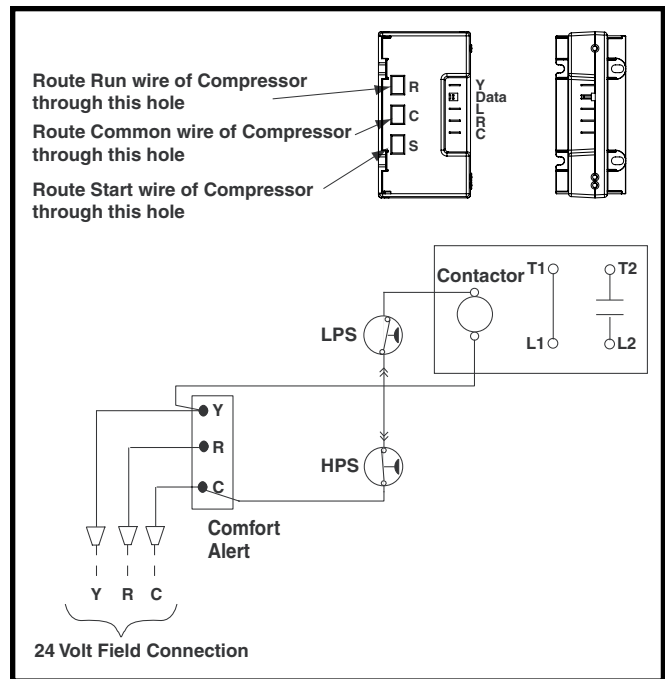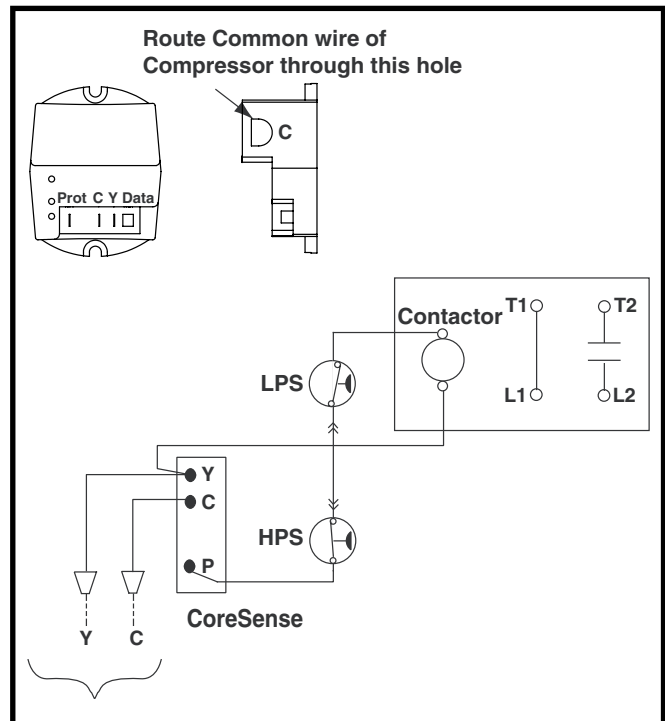

Figure 2. Current AC Wiring with Comfort Alert

Figure 3. New AC Wiring with CoreSense

REPLACING COMFORT ALERT WITH CORESENSE ON AN HP APPLICATION

1. Remove all wires from the Comfort Alert, including wires that run through the comfort alert sensing holes. See Figure 4.
2. Reconnect the Run and Start wires from the compressor to their original connections. The Run (yellow) wire should connect to the "T1" of the contactor. The Start (Red) wire should connect to the "H" terminal of the capacitor. See Figure 5.
3. Feed the Common (black) wire of the compressor through the sensing hole of the new CoreSense. Then reconnect the terminal to "T2" of the contactor.
4. Reconnect the yellow wire from the coil of the contactor to the "Y" terminal on the CoreSense. Also reconnect the "Y" signal wire from the defrost board to the "Y" on the CoreSense.
5. Reconnect the "R" wire from the defrost board to the "R" terminal on the CoreSense. This is the only wire that connects to the "R" terminal on the CoreSense.
6. Reconnect the "C" wire from the thermostat to the "C" terminal on the CoreSense. This is the only wire that connects to the "C" terminal on the CoreSense.
7. Connect the black wire from the right side of the contactor to the "P" terminal on the CoreSense. This is the only wire that connects to the "P" terminal on the CoreSense.
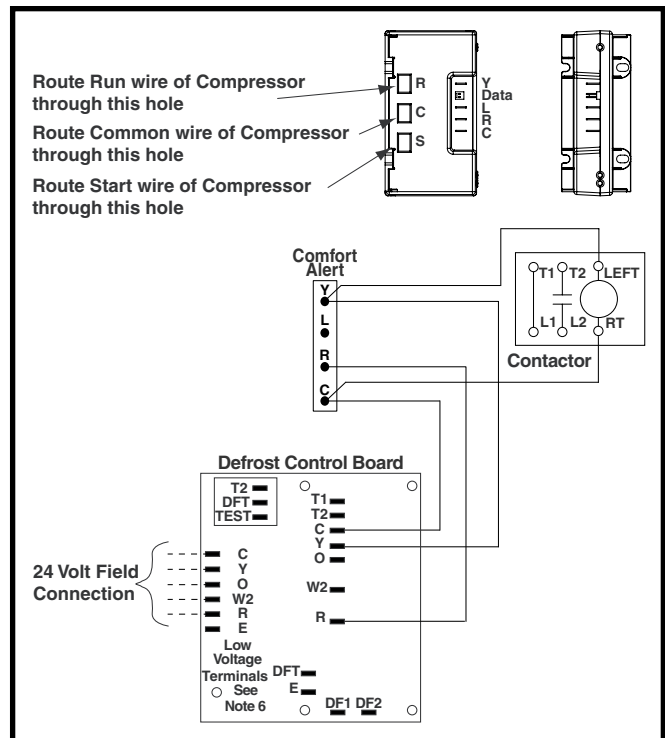

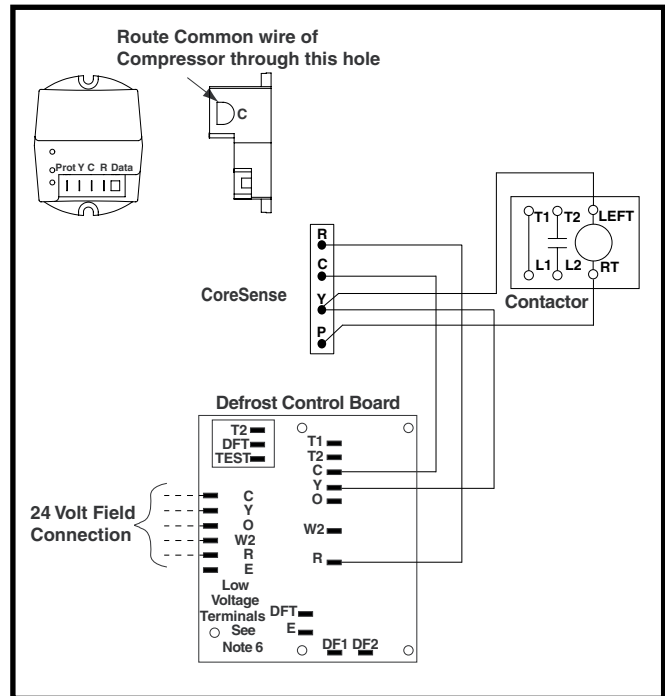**Figure 4. Current HP Wiring with Comfort Alert**

Figure 5. New HP Wiring with CoreSense

The installer performing this work assumes all responsibility for this kit. These instructions are primarily intended to assist qualified individuals experienced in the proper installation of these components. Some local codes require licensed installation/service personnel for this type of equipment. Safety should always be the deciding factor when installing this product and using common sense plays an important role as well. Improper installation of the components or failure to follow safety warnings could result in serious injury, death, or property damage. After completing the installation, return these instructions to the Homeowner's Package for owner-user's future reference.