

Low Ambient Kit, Differential Pressure Control

Installation Instructions

Light Commercial Series Accessory - R-410a Equipment

This kit will allow the installation of a differential head-pressure control on Light Commercial Packaged Gas/Electric and Electric/Electric units for cooling operation under low ambient conditions. The differential pressure switch will monitor the Stage 1 compressor discharge pressure and cycle the outdoor fans on-and-off in order to protect the compressor from low suction line conditions.

WARNING:

This kit is to 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 serious injury, property damage, or death.

WARNING:

All electrical wiring must comply with the latest edition of the National Electrical Code ANSI/NFPA 70.

These instructions are primarily intended to assist qualified individuals experienced in the proper installation of this appliance. Some local codes require licensed installation/service personnel for this type of equipment.

Kit Contents:

1. Differential Pressure Control for R-410a with integral capillary tube
 - a. Pressure Control
 - b. Pressure Control Parts bag:
 - i. 10-32 screws & washers (2 ea.)
 - c. Manufacturer's Installation Instructions
 - d. Indoor Mounting Bracket (not used)
2. Outdoor Mounting bracket
3. Outdoor bracket Cover-plate
4. Electrical wires for control connection:
 - i. 200" – long: 12.5 & 15T models
 - ii. 90" – long: 6 – 10T models
 - iii. Jumper wire assembly (orange): 7.5-15T models
5. Parts bag:
 - a. Service Valve "T" fitting
 - b. 7/8" Star bushing
 - c. 4" long – sheet metal edge guard
 - d. #10 – 1/2" Self drilling/tapping screws (2 ea.)
 - e. # 10 – 1/2" Blunted screw (1 ea.)
 - f. Zip-ties (6 ea.)
 - g. Warning Sticker
6. These Instructions

Installation Instructions

1. Set Indoor thermostat to "Off" position.
2. Disconnect all electrical power to appliance.
3. Remove the stage 1 compressor access panel or grill and the control panel access panel.
4. Install Low ambient control to the mounting bracket using the two (2) 10-32 mounting screws & washers that are located in the box for the pressure control. (See Figure 1.) Install the 7/8" Star bushing in the bottom of the pressure control.

Figure 1.

5. Install the Low ambient control/mounting bracket assembly to the Stage one compressor base-plate. Center the bracket between the compressor mounting bolts and use the self-tapping screws to attach the bracket to the base-plate.

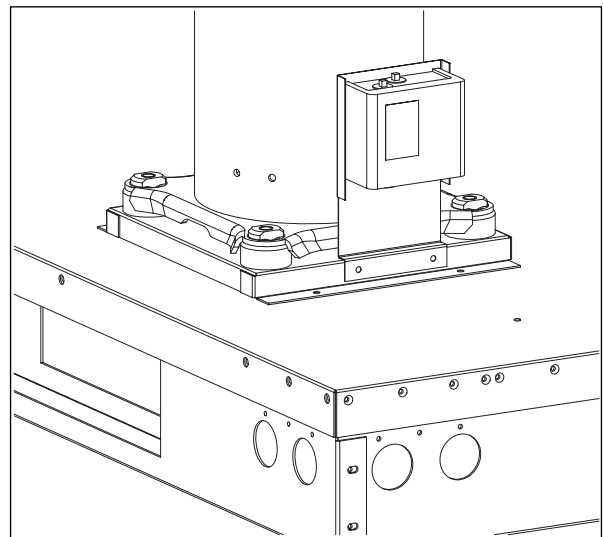


Figure 2.

6. On 6 – 10T Units: one compressor discharge line service port
 - a. Remove the units manual reset - high pressure switch from the Stage one compressor discharge (1/2" line) service port.
7. On 12.5 & 15T Units: two compressor discharge line service ports
 - a. Leave the manual reset – high pressure switch installed and remove the pink service port cap from the second discharge line service port.
8. Un-coil the capillary tubing (35" long) from the pressure switch and route the tube up towards the discharge port. Take care to ensure the tubing does not kink and is not near any sheet metal edges or other obstructions and that the cover-plate will clear the tubing. Also ensure that at least one coil of a 1" diameter (minimum) loop is installed in the capillary tubing under the control for vibration dampening.
9. Install the tee fitting adapter on to the capillary tubing swivel-nut. The capillary tube should be installed on the center, 90 degree fitting of the tee (nearest to the tee fitting swivel-nut) that does not have a valve core installed. Do not over-tighten.

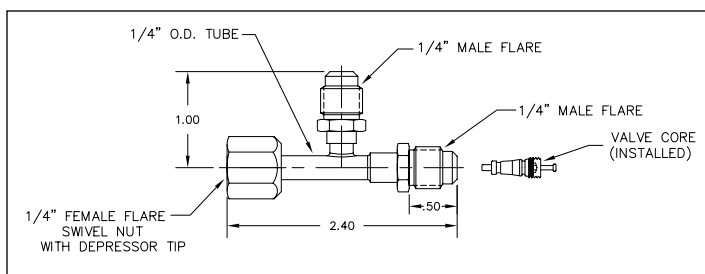


Figure 3.

10. Verify that the remaining tee fitting port is fitted with a valve core and install the tee fitting on the discharge line service port. Do not over-tighten.
11. On 6 – 10T Units: one compressor discharge line service port
 - a. Re-install the manual reset – high pressure switch on the remaining tee fitting port.
12. On 12.5 & 15T Units: two compressor discharge line service ports
 - a. Install pink service port cap on the remaining tee fitting port.
13. Perform a leak check of the installation.
14. Remove the control switch, plastic cover. (Single, straight blade screw, front of control)
15. Route the factory stripped ends of the appropriate length unit wires provided in the kit through the star bushing and make connections to terminals 1 & 4 of the control. Connect orange wire to terminal 4 and violet wire to terminal 1. (For additional details, refer to page 3 of the Danfoss instructions, Wiring Option A.)

16. Route the control wires through the unit along the same path as the Stage 1 compressor power wires. Use the included zip-ties to secure the wires to the existing wire bundles as needed.

Note 1:

Always include a drip loop in the wires below the pressure control and ensure that wires are not routed around or near any sharp edges.

Note 2:

On 12.5 & 15T units, an electrician's fish-stick will reduce the effort required in routing the wires to the unit control panel.

17. On 6T Units: one 24V input wire to OD Fan Contactor
 - a. Refer to the appropriate unit wiring diagrams on page 3. Remove the orange 24V input power wire from the outdoor fan contactor relay. Connect to the orange wire connected to terminal 4 of the pressure control and use the provided heat-shrink tubing to insulate the connection.

18. On 7.5 – 15T Units: two 24V input wires to OD Fan Contactor

- a. Refer to the appropriate unit wiring diagrams on page 3. Remove the 24V input power wires from the outdoor fan contactor relay. Connect these wires to the insulated (red), male spade terminals provided on the jumper wire assembly and use the provided heat-shrink tubing to insulate the connections. Connect the insulated (blue) female receptacle on the orange jumper wire to the orange wire connected to terminal 4 of the pressure control.

19. Connect the violet wire from terminal 1 of the pressure control to the 24V relay input of the outdoor fan contactor.
20. Inspect all connections for tightness, security and ability to short to ground. Collect any excess wire and bundle securely in control panel area with zip-tie. Inspect all wire routings for possible entanglements and security. Trim excess length from all zip-ties.
21. Review Danfoss Instructions (included) and notes below. Then set the pressure control to the desired compressor discharge pressure set point and differential pressure set point.

Note 1:

Nordyne coils and tubing systems are designed for a maximum working pressure of 550 psig.

Note 2:

On commercial R-410a systems, the Manual-Reset, Hi-pressure safety switch is set to cut off compressor operation at 650 psig. DO NOT bypass hi-pressure switch.

Note 3:

Nordyne highly recommends that the pressure control not be set to a discharge pressure cutout setting lower than 190 psig.

22. Replace plastic, pressure control cover plate.

23. Install outdoor bracket cover plate over the control and secure with the blunt point screw provided on the right hand side of the cover plate.
24. Wipe off any excess dirt, moisture and/or oil from the cover plate with a clean rag and install the supplied warning sticker on front surface so that it is visible (see Figure 1.)

25. Replace all unit panels.
26. Reconnect power to unit and set thermostat to desired setting.

Note: If the pressure control is modulating the OD fan(s) operation and the compressors discharge pressure is fluctuating, the unit charging charts provided in the installation instructions can not be used to verify operation of the unit.

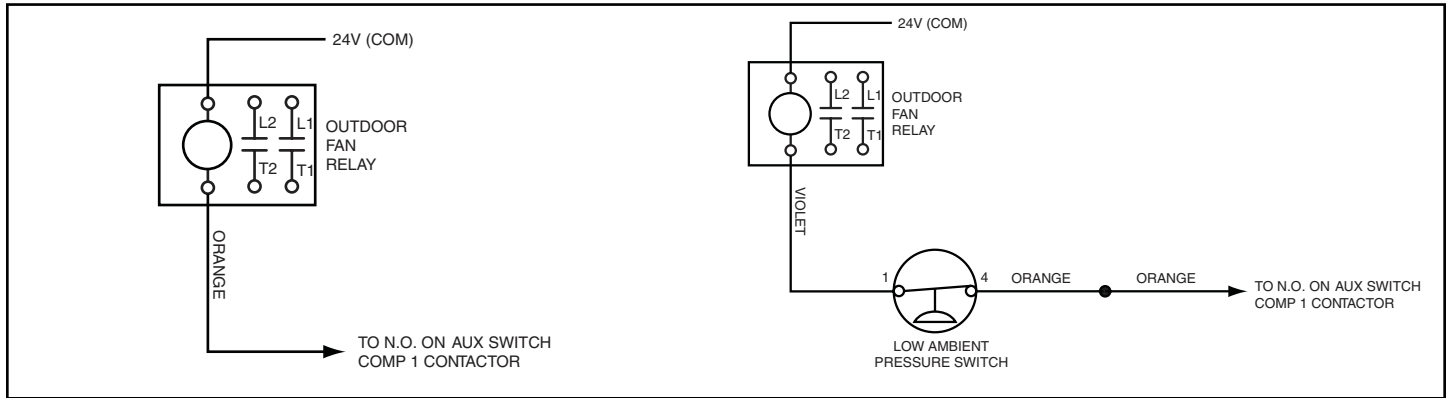


Figure 4. 6T WD Before

Figure 5. 6T WD After

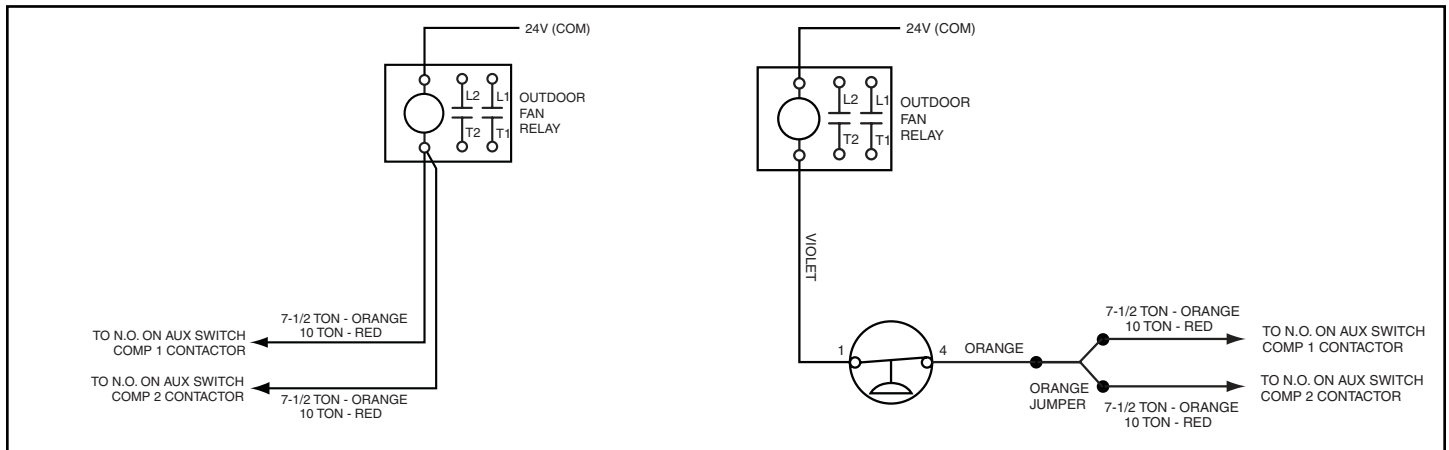


Figure 6. 7-1/2 & 10T WD Before

Figure 7. 7-1/2 & 10T WD After

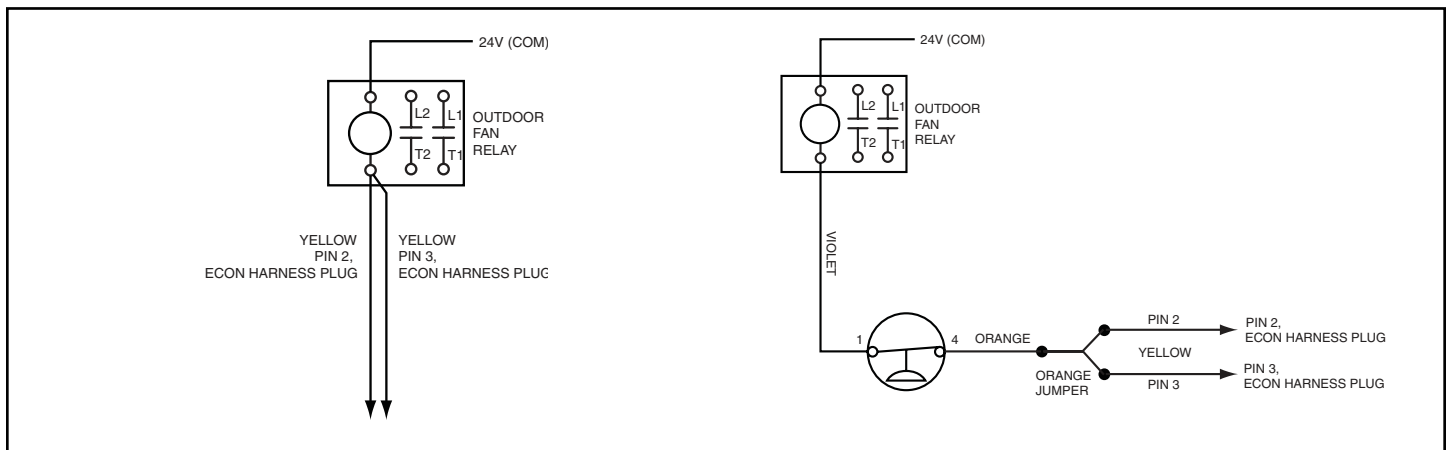


Figure 8. 12-1/2 & 15T WD Before

Figure 9. 12-1/2 & 15T WD After

INSTALLATION/PERFORMANCE CHECK LIST

DATE INSTALLED: _____

UNIT MODEL NUMBER: _____

UNIT SERIAL NUMBER: _____

Installation Address:

Installed By:

PRESSURE CONTROL SETTING

Discharge Cutout setting: _____ psig

Differential setting: _____ psig

**INSTALLER: PLEASE LEAVE THESE
INSTALLATION INSTRUCTIONS
WITH THE OWNER.**

