

Small Rooftop Units Gas Heating/Electric Cooling, Electric Cooling, and Heat Pump Units 3 to 12½ Tons (50/60 Hz) Accessory Controls Upgrade Package

Cancels: IIK 548-36-6

IIK 548-36-24
4/1/95

Installation Instructions

Part Number: CRCNTRLS001A00

NOTE: Read and become familiar with all instructions before beginning installation.

SAFETY CONSIDERATION

Installation and servicing of air-conditioning equipment can be hazardous due to system pressures and electrical components. Only trained and qualified service personnel should install, repair, or service air-conditioning equipment.

When working on air-conditioning equipment, observe precautions in the literature, tags, and labels attached to the unit, and other safety precautions that may apply. Be sure installation conforms to all applicable local and national codes.

⚠ WARNING

Before performing service or maintenance operations on unit, turn off main power switch to unit. If gas unit, shut off gas supply *before* shutting off main power. Electrical shock can cause personal injury or death. TAG DISCONNECT SWITCH WITH A SUITABLE WARNING LABEL.

INSTALLATION

Refer to Table 1 for accessory controls upgrade package contents.

Table 1 — Accessory Controls Upgrade Package Contents

QUANTITY	ITEM
1	High Pressure Cutout Switch (opens at 428 psig ± 7 psig, closes at 320 psig ± 20 psig)
1	Loss-of-Charge/Low Pressure Cutout Switch (opens at 7 psig ± 3 psig, closes at 22 psig ± 5 psig)
1	Freeze Protection Cutout Switch (opens at 30 F ± 5 F, closes at 45 F ± 5 F)
4	Wire Ties

⚠ WARNING

Turn off unit power! Electrical shock and personal injury could result.

NOTE: On units with 2 compressors, 2 control packages will be necessary since each compressor must have its own set of switches.

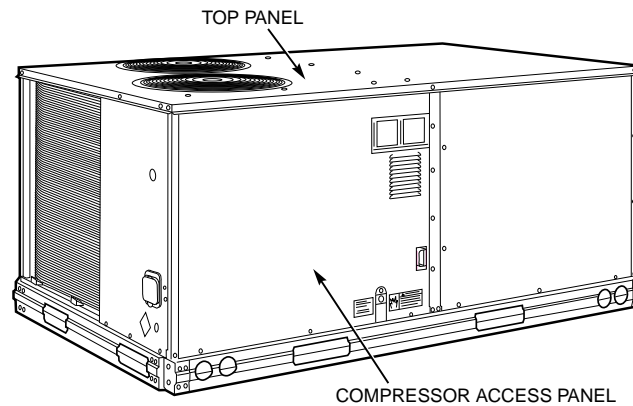
1. Disconnect all power to the unit.
2. Remove compressor access panel (see Fig. 1).
3. Remove main control box cover.
4. Locate discharge and liquid lines (see Fig. 2-5).
5. Unscrew Schrader cap from access ports located furthest away from the compressor.
6. Screw the high-pressure cutout switch(es) (HPS) onto the discharge line access port and the low-pressure cutout switch(es) (LPS) onto the liquid line access port (see Fig. 2-5).

NOTE: The LPS(s) may be installed on the suction line if desired. However, on heat pump units or any units with head pressure control, the LPS(s) MUST be installed on the liquid line to prevent nuisance tripping.

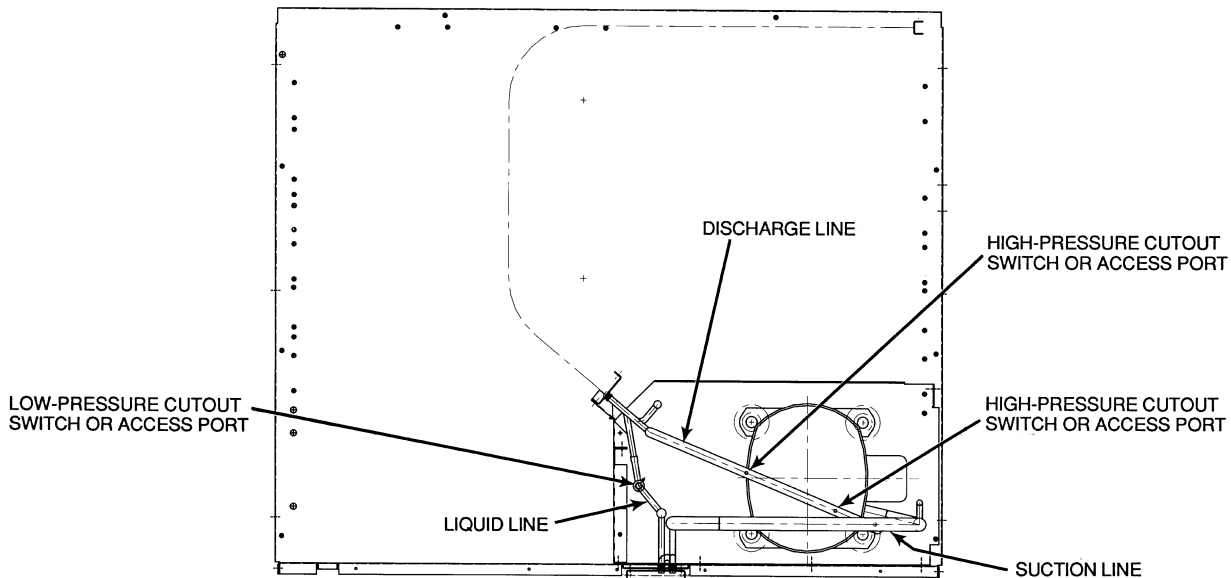
7. Remove the wire connecting Y1 on the control terminal board to C1 (compressor contactor) in the main unit control box. (For 2-compressor units, also remove the wire connecting Y2 and C2.)
8. Route black and blue wires from the HPS(s) and LPS(s) through the entry hole in the bottom of the main unit control box.
9. Make a connection at Y1 on the connection board with the black HPS wire. (On 2-compressor units, also make a connection at Y2 on the connection board with the second HPS black wire.)
10. Splice the blue wire(s) from the LPS(s) into the black wire(s) of the HPS(s).

NOTE: On 2-compressor units, be careful not to mix controls for circuits 1 and 2. All circuit 1 controls MUST complete the circuit between Y1 and C1 and all circuit 2 controls MUST complete the circuit between Y2 and C2 (see Fig. 6).

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.



**Fig. 1 — Typical Base Unit
(Gas Heating/Electric Cooling Shown)**



**Fig. 2 — Typical High-Pressure Switch and
Low-Pressure Switch Installation Locations
(Single-Compressor Unit Shown)**

11. Remove top panel from unit. Save screws.
12. Locate the indoor coil in the fan blower compartment (see Fig. 7 or 8).
13. On 3 to 6 ton units, firmly secure the freeze protection cutout switch (FPT) to the first hairpin on the second row of the coil (see Fig. 9). On 7½ to 12½ ton units, firmly secure FPT to the eleventh hairpin down from the top of the indoor coil using the clip provided on the FPT (see Fig. 9). For 2-compressor units, secure the circuit 1 (compressor one) FPT to the eleventh hairpin down from the top. Secure the circuit 2 (compressor 2) FPT to the fifth hairpin down from the top in the same manner (see Fig. 9).
14. Remove the center post from the unit (see Fig. 7 or 8), allowing access to the main unit control box through the wiring grommet.
15. Run black FPT wire(s) through the grommet and into the main unit control box.
16. Splice the black FPT wire(s) to the remaining blue LPS wire(s). On 2-compressor units, be certain to splice circuit 1 (compressor one) FPT wire to circuit 1 (compressor one) LPS wire and circuit 2 (compressor 2) FPT wire to circuit 2 LPS wire.
17. Connect the other end(s) of the FPT wire(s) to the compressor contactor(s) in the main unit control box. On 2-compressor units, connect the FPT wire for circuit 1 (compressor one) to C1, and for circuit 2 (compressor 2) to C2 (see Fig. 6). Ensure a complete circuit is made.
18. Replace the following:
 - a. Center post.
 - b. Unit top panel.
 - c. Control box cover.
 - d. Compressor access panel.
19. Reconnect power to the unit.
20. Test unit for proper operation of both circuits in cooling.

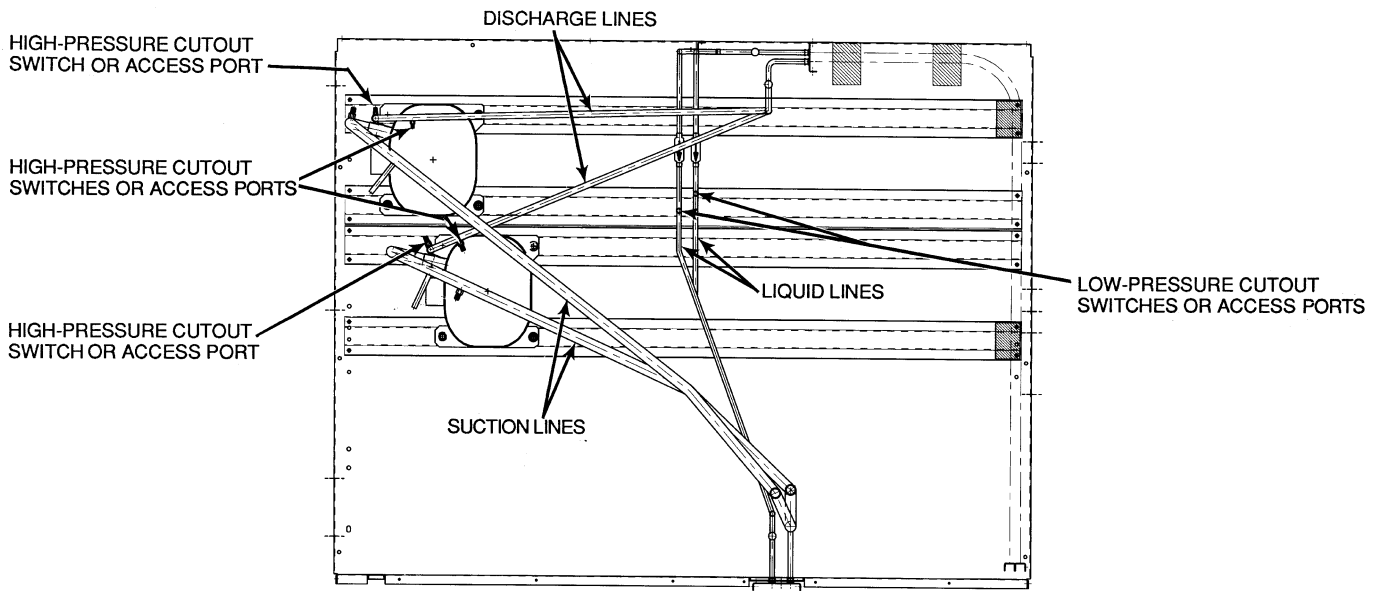


Fig. 3 — Typical High-Pressure Cutout Switch and Low-Pressure Cutout Switch Installation Locations (2-Compressor Unit Shown)

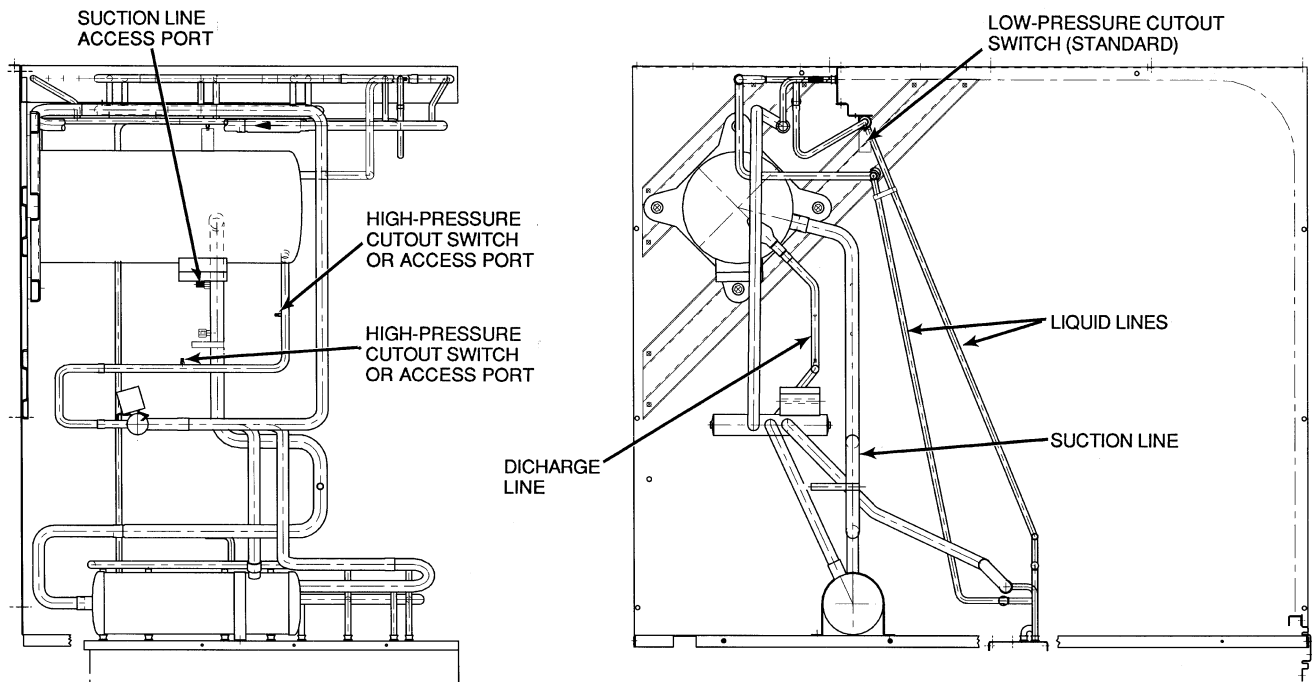


Fig. 4 — Typical High-Pressure Cutout Switch and Low-Pressure Cutout Switch Installation Locations (3 and 5 Ton Heat Pump Units Shown)

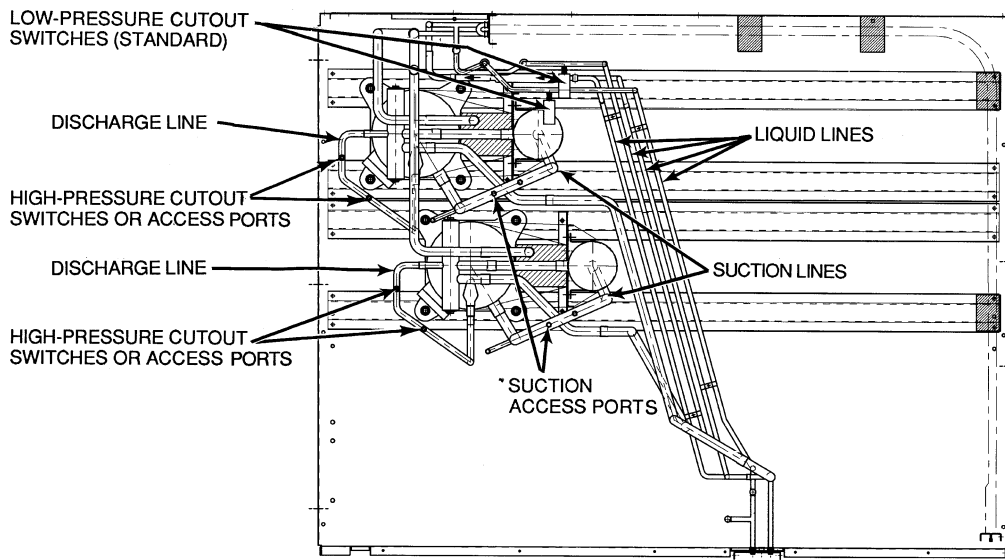
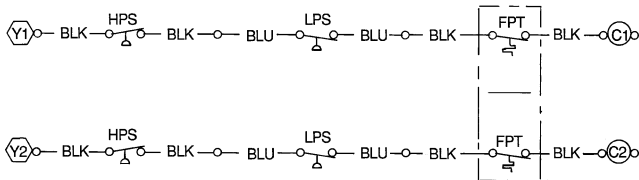


Fig. 5 – Typical High-Pressure Switch and Low-Pressure Switch Installation Locations (7½ and 10 ton Heat Pump Units Shown)



LEGEND

- C** — Contactor
- FPT** — Freeze Protection Cutout Switch
- HPS** — High Pressure Cutout Switch
- LPS** — Low Pressure Cutout Switch

Fig. 6 — Control Wiring Connections on 2-Compressor Units

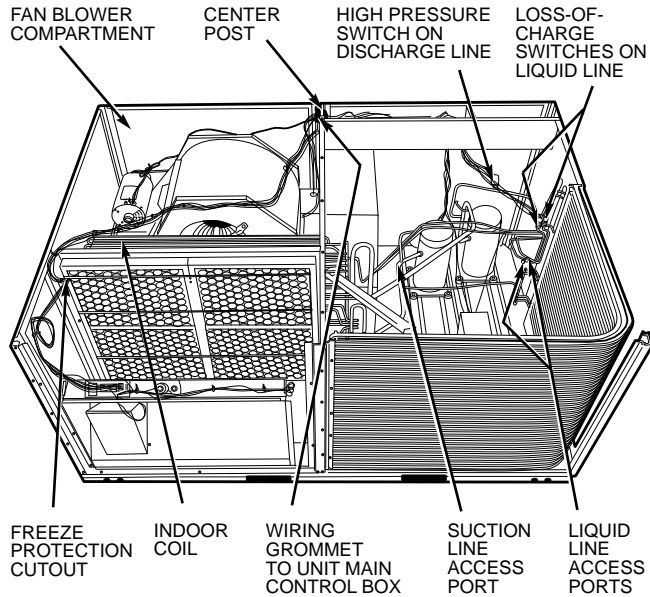


Fig. 7 — Typical Installation of Freeze Protection Cut-out Switch(es) (2-Compressor Unit Shown)

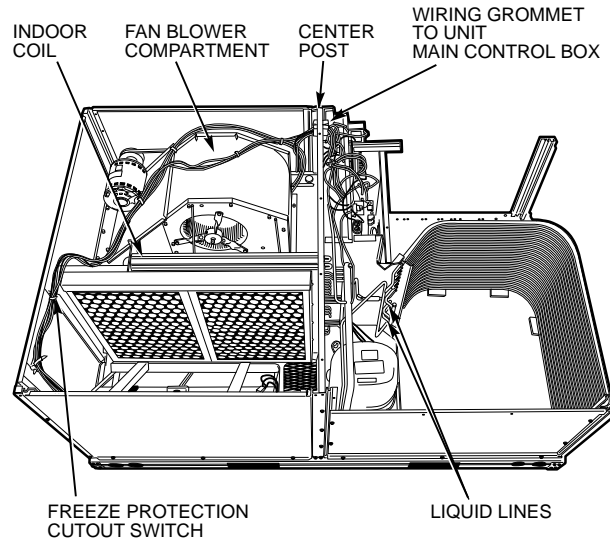


Fig. 8 — Typical Installation of Freeze Protection Cut-out Switch(es) (Single Compressor Unit Shown)

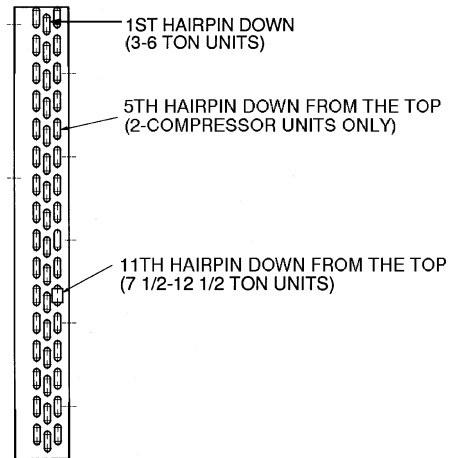


Fig. 9 — Indoor-Coil Hairpins for Freeze Protection Cutout Switch