Installation Instructions

Part No. CRCNDOVR005A00

SAFETY CONSIDERATIONS

Installation of this accessory can be hazardous due to system pressures, electrical components, and equipment location (such as a roof or elevated structure). Only trained, qualified installers and service technicians should install, start-up, and service this equipment.

When installing this accessory, observe precautions in the literature, labels attached to the equipment, and any other safety precautions that apply:

- Follow all safety codes
- Wear safety glasses and work gloves
- Use care in handling and installing this accessory

It is important to recognize safety information. This is the safety-alert symbol: ⚠. When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, CAUTION, and NOTE. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices, which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

⚠ WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury and/or death.

Before beginning any modification, be certain that the main-line electrical disconnect switch is in the OFF position. Close the main gas supply shutoff valve. Tag disconnect switch and gas valve with suitable warning labels.

INTRODUCTION

The condensate overflow switch accessory kit includes an electronic controller and sensor for use in 3-28 ton light commercial rooftop units. The sensor can be used in downflow or side discharge units to shutdown the unit depending on the unit controller, after 120 seconds of constant water contact, if the drain trap becomes plugged. It requires 2 minutes to reset after the water has cleared. See Table 1 for sensor control logic.

Table 1 — Sensor Control Logic

POWER	SENSOR	RELAYS	LIGHT
OFF	Dry	Open	Off
OFF	Wet	Open	Off
ON	Dry	Closed	Off
ON	Wet	Open	On
ON	Dry to Wet	Open at 2 min.	On at 2 min.
ON	Wet to Dry	Closed at 2 min.	Off at 2 min.

PRE-INSTALLATION

Remove accessory packaging and inspect shipment for damage. See Table 2 for kit contents. File claim with shipping company if accessory is damaged. Verify unit is level and adjust if necessary.

Table 2 — Accessory Kit Contents

ITEM	DESCRIPTION	QTY	PART NUMBER
1	Senor Assembly	1	HL39ZZ020
2	Harness[a]	1	57745-001
3	Harness[b]	1	57745-003
4	Bracket Controller[c]	1	48TC004656
5	Bracket Controller[d]	1	48TC004682
6	Bracket Sensor	1	48TM503400
7	MRT Unit Bracket	1	50HE006774
8	MRT Bracket Controller Screw	2	AK92AB098
9	SRT Bracket Sensor Screw	4	AL48AM217
10	SRT Bracket Sensor	1	48TC004655

NOTE(S):

a. For use in all units except SystemVu™ controller units.
b. For use with SystemVu controller units only.
c. For use in SRT units. See Table 4.
d. For use with COFS (Condensate Overflow Switch) controllers in MRT units. See Table 5.

Table 3 — Model Usage

ACCESSORY P/N USAGE	MODEL	SIZE
CRCNDOVR005A00	48/50FC	04-30
	50FCQ	04-28
	48/50GC	04-14
	50GCQ	04-06
	48/50HC	04-28
	50HCQ	04-12
	48/50KC	04-06
	50KCQ	04-06
	48/50LC	04-26
	48/50TC	04-30
	50TCQ	04-24
	582K/559K	04-30
	547K	04-14
	581K/551K	04-14
	549K	04-06
	581J/551J	04-28
	549J	04-12
	582J/559J	04-06
	547J	04-06
	580J/558J	04-30
	548J	04-24
	RGV/RAV	036-336
	RHV	036-300
	RGW/RAW	036-150
	RHW	036-060
	RGH/RAH	036-150
	RHH	036-120
	RGX/RAX	036-060
	RHX	036-060
	RGS/RAS	036-336
	RHS	036-240

⚠ WARNING

To avoid the possibility of electrical shock, open all disconnects before installing or servicing this accessory.

INSTALLATION

SRT Unit Installation

The SRT unit installation instructions apply to the units listed in Table 4.

Table 4 — SRT Units

CARRIER		BRYANT		ICP	
MODEL	SIZE	MODEL	SIZE	MODEL	SIZE
48/50FC	04-16	582K/559K	04-16	RGV/RAV	036-180
50FCQ	04-14	547K	04-14	RHV	036-150
48/50GC	04-14	581K/551K	04-14	RGW/RAW	036-150
50GCQ	04-06	549K	04-06	RHW	036-060
48/50HC	04-14	581J/551J	04-14	RGH/RAH	036-150
50HCQ	04-12	549J	04-12	RHH	036-120
48/50KC	04-06	582J/551J	04-06	RGX/RAX	036-060
50KCQ	04-06	547J	04-06	RHX	036-060
48/50LC	04-12	—	—	—	—
48/50TC	04-16	580J/551J	04-16	RGS/RAS	036-181
50TCQ	04-14	548J	04-14	RHS	036-150

INSTALL CONDENSATE OVERFLOW SWITCH (SRT UNITS)

1. Remove filter panel. If an economizer is installed on unit, it must be removed to access filter rack.
2. Install condenser switch on filter rack as shown in Fig. 1 using bracket (Item No. 4). Use existing screws, if not using existing screws use 2 (Item No. 9) screws.
3. Connect condenser switch with harness (Item No. 2 or Item No. 3) by connecting corresponding harness colors. NOTE: Harness usage is defined by the control board type. Refer to Step 5.
4. Pass harness above coil bracket and fan section top bracket. NOTE: To route scroll and VAF (Vertical Airflow Fan), follow the same instructions as shown in Fig. 2 and 3.
5. See corresponding section for wiring based on the type of control board listed below.
   a. Central Terminal Board (CTB)
   b. Integrated Staging Control Board (ISC)
   c. SystemVu™ Controller
   d. Unit Control Board (UCB)

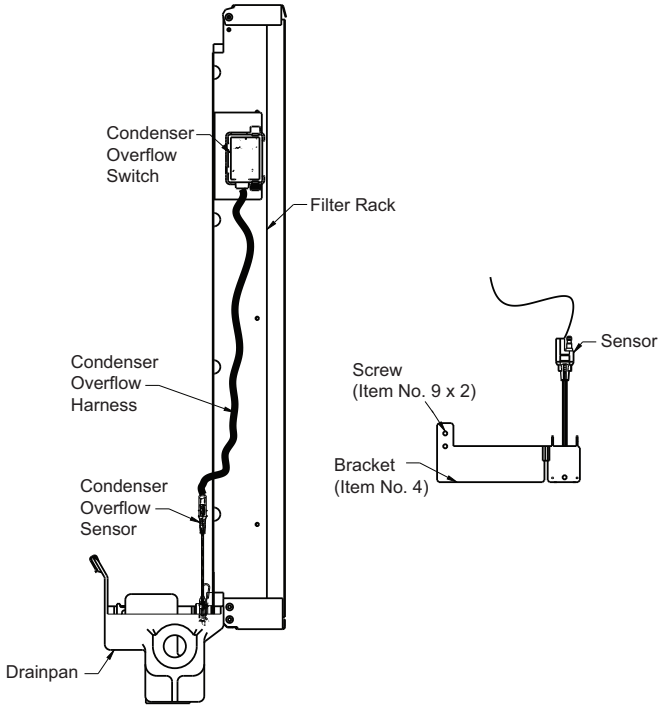

Fig. 1 — SRT Units Sensor Location

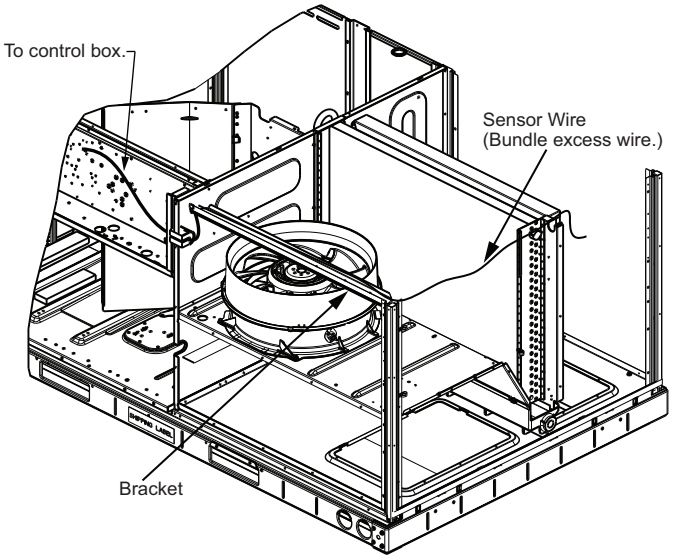

Fig. 2 — Typical Wire Routing (Vane Axial Fan Unit Shown)

Switch wiring for SRT units with CTB (Central Terminal Board)

1. Refer to installing condensate overflow switch section on page 2 for harness routing.
2. Connect condenser switch with harness (Item No. 2) by connecting corresponding harness colors.
3. Connect harness to CTB board on control box as shown in Fig. 3. The red and black wires are connected to 24V OUT and C terminals. Gray and violet wires are connected to remote shutdown. If a smoke detector is installed, you will need a two to one terminal for 24V OUT and C.
4. Remove wire from C1 COIL and connect to Gray "COND 1 IN" wire from controller. Connect violet "COND 1 OUT" wire from controller to open terminal on C1 COIL. See Fig. 3 and 4.
5. Cut jumper for remote shutdown.

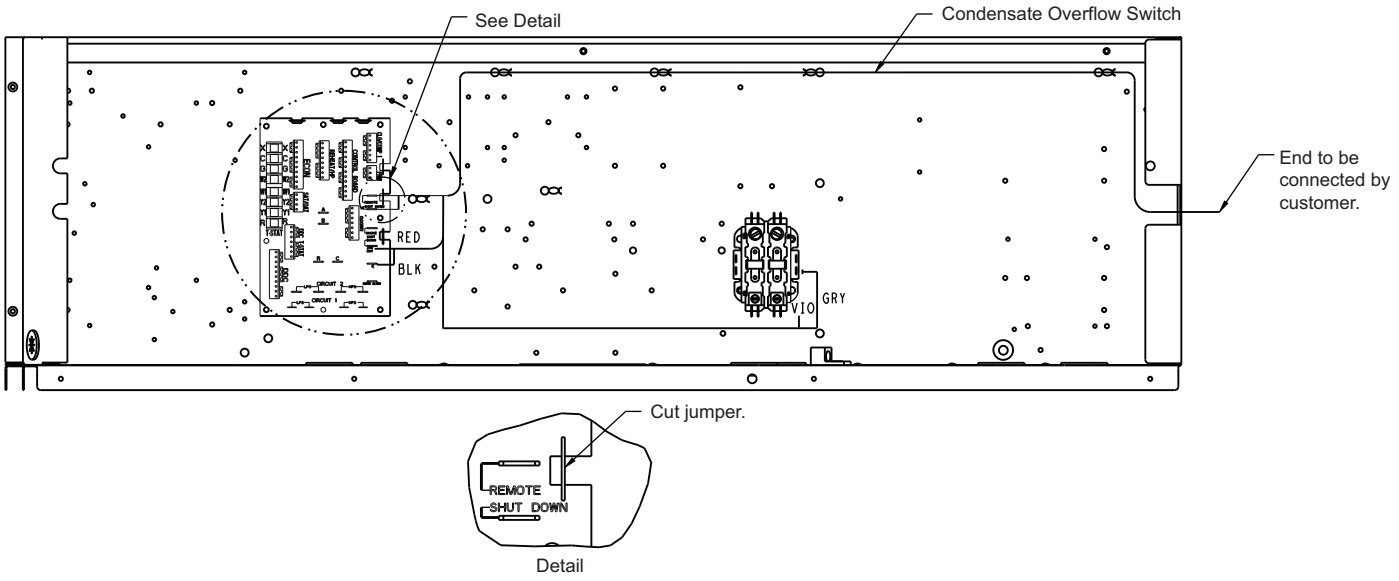

Fig. 3 — Typical SRT Control Box with Central Terminal Board (CTB)

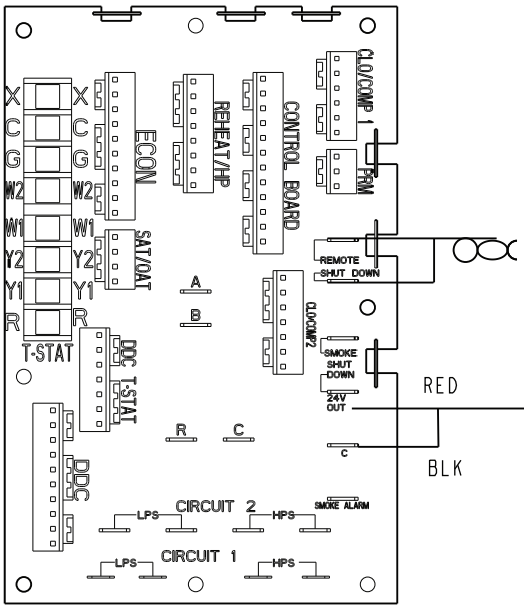

Fig. 4 — Typical Connection Diagram for CTB Units

Switch wiring for SRT units with ISC (Integrated Staging Control Board)

1. Remove control box cover panel.
2. Refer to installing condensate overflow switch section on page 2 for harness routing.
3. Connect Condenser switch with harness (Item No. 2) by connecting corresponding harness colors.
4. Connect harness to ISC board on control box. See Fig. 5 and 6. The red and black wires are connected to terminals 4 and 7 from terminal board 4. Violet and gray wires are connected to the overflow terminals from ISC board.
5. Cut jumper terminal 1 and 2 in the ISC board.

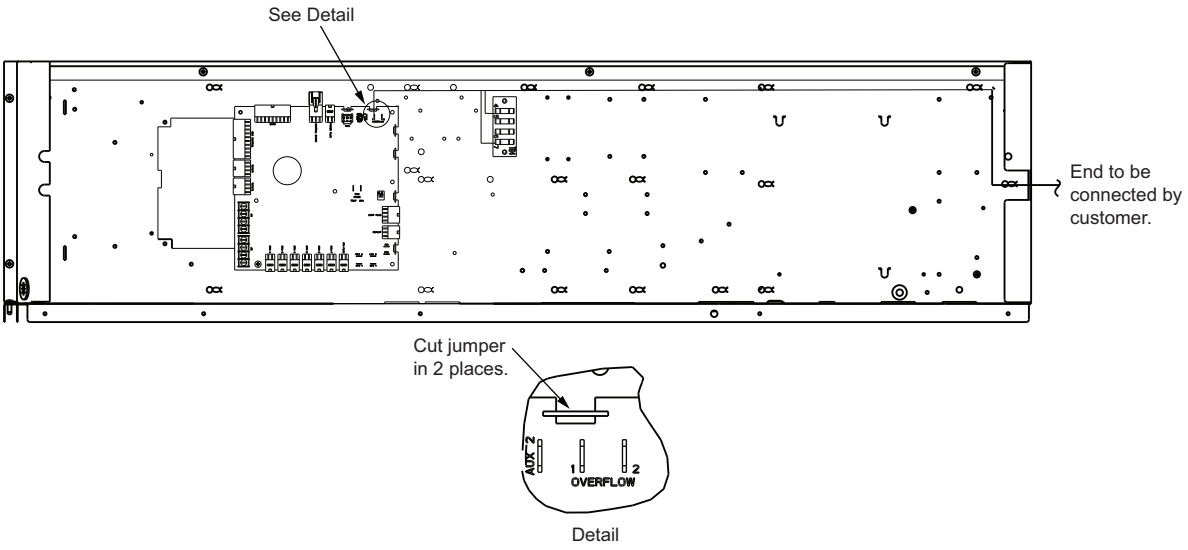

Fig. 5 — Typical SRT Control Box with Integrated Staging Control (ISC) Board

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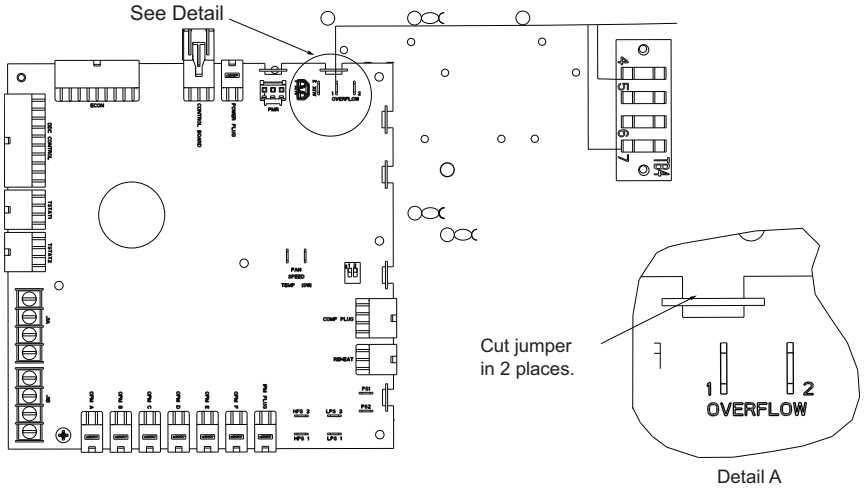


Fig. 6 — ISC Board Component Layout (Detail View)

Switch wiring for SRT units with SystemVu™ Controller

1. Remove control box cover panel.
2. Refer to installing condensate overflow switch section on page 2 for harness routing.
3. Connect condenser switch with harness (Item No. 3) by connecting corresponding harness colors. Connect harness (Item No. 3) to SystemVu controller on control box in terminal J4, refer to Fig. 7 and 8.

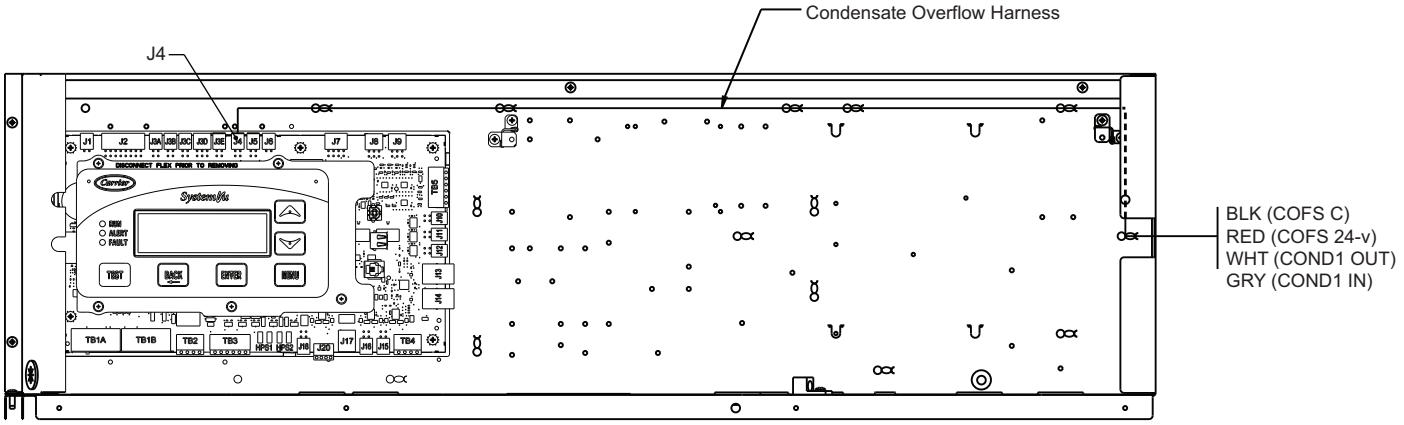


Fig. 7 — Harness Connection Diagram (SystemVu Controller)

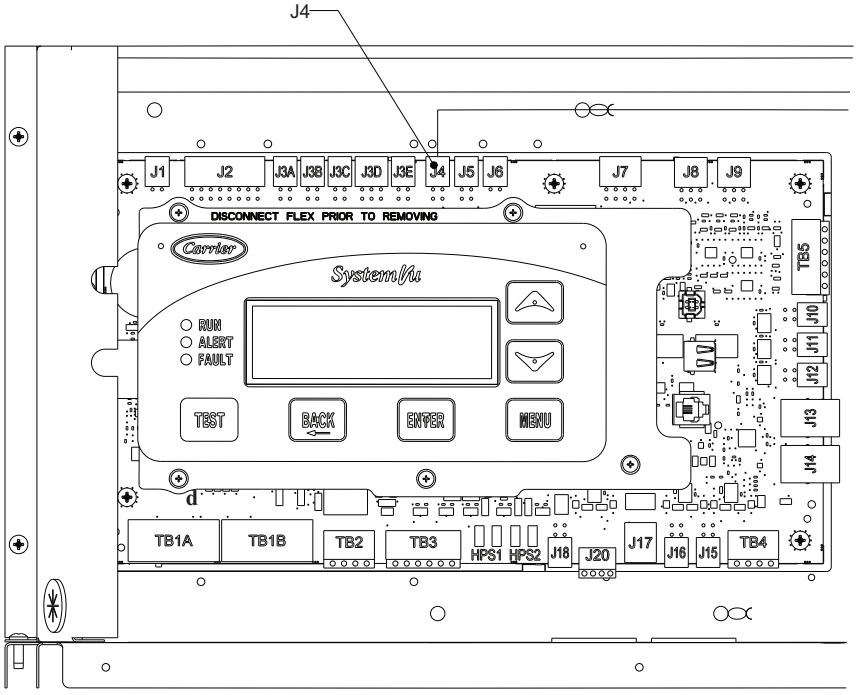


Fig. 8 — J4 Connection on SystemVu Controller (Detail View)

Switch wiring for SRT units with UCB (Unit Control Board)

1. Remove control box cover panel.
2. Refer to installing condensate overflow switch section on page 2 for harness routing.
3. Connect Condenser switch with harness (Item No. 2) by connecting corresponding harness colors.
4. Connect harness to UCB board on control box, see Fig. 9. The red and black wires are connected to the R and C terminals. Gray and violet wires are connected to remote shutdown.
5. Remove wire from C1 COIL and connect to Gray "COND 1 IN" wire from controller. Connect violet "COND 1 OUT" wire from controller to open terminal on "C1 COIL, See Fig. 10.

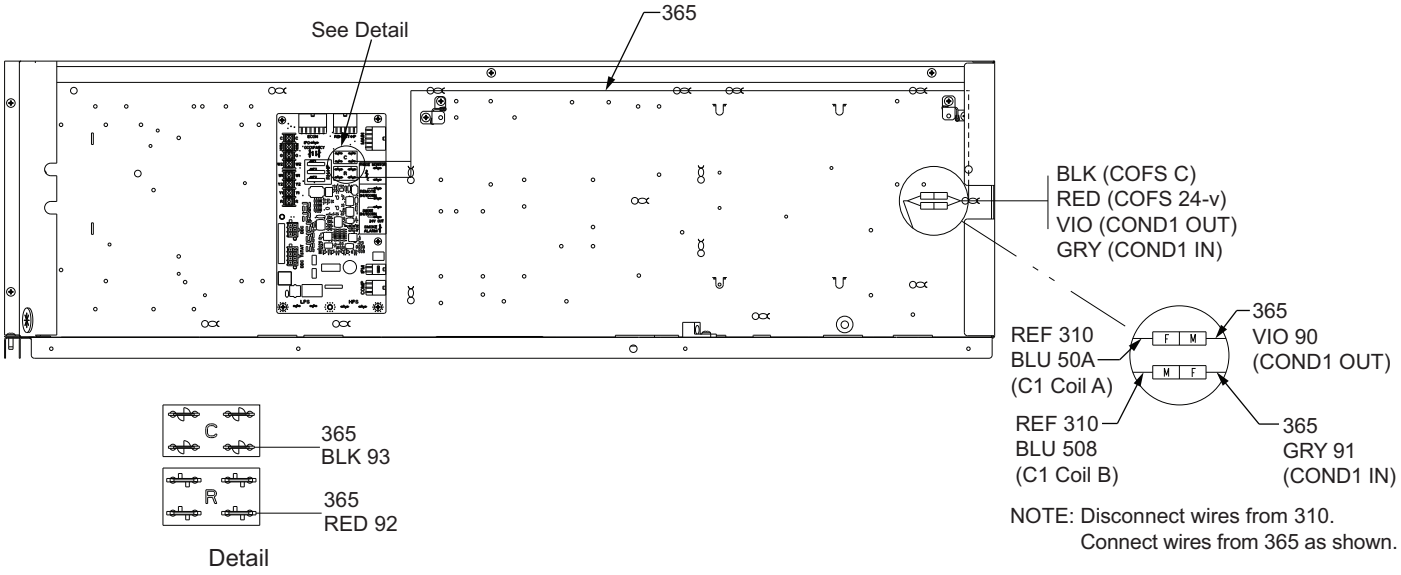
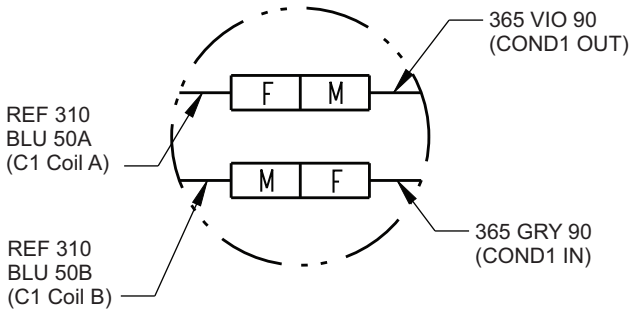


Fig. 9 — UCB Unit Component Layout



NOTE: Disconnect wires from 310. Connect wires from 365 as shown.

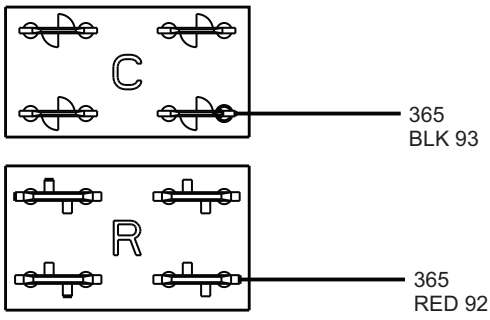


Fig. 10 — UCB Main Circuit Board (Detail View)

MRT Unit Installation

The MRT unit installation instructions apply to the units listed in Table 5.

Table 5 — MRT Units

CARRIER		BRYANT		ICP	
MODEL	SIZE	MODEL	SIZE	MODEL	SIZE
48/50FC	20-30	**582K/559K**	04-16	**RGV/RAV**	036-180
50FCQ	17-28	**547K**	04-14	**RHV**	036-150
48/50HC	17-28	**581J/551J**	17-28	**RGH/RAH**	181-300
48/50LC	14-26	—	—	—	—
48/50TC	17-30	**580J/551J**	17-30	**RGS/RAS**	210-336
50TCQ	17, 24	**548J**	17, 24	**RHS**	181, 240

INSTALL CONDENSATE OVERFLOW SWITCH (MRT UNITS)

1. Open filter door.
2. Install switch on bracket (Item No. 7) only using switch clip.
3. Install bracket (Item No. 7). Bracket should be on the right side of the drain pan at the middle as shown in Fig. 11.
4. Connect Condenser switch with harness (Item No. 2 or Item No. 3) by connecting corresponding harness colors. NOTE: Harness usage is defined by the control board type. Refer to Step 5.
5. Route wire to control board in control box outside of the drain pan. Use wire ties to fix wire.
6. See corresponding section for wiring based on the type of control board:
   a. Central Terminal Board (CTB)
   b. Integrated Staging Control Board (ISC)
   c. SystemVu™ Controller
   d. Unit Control Board (UCB)

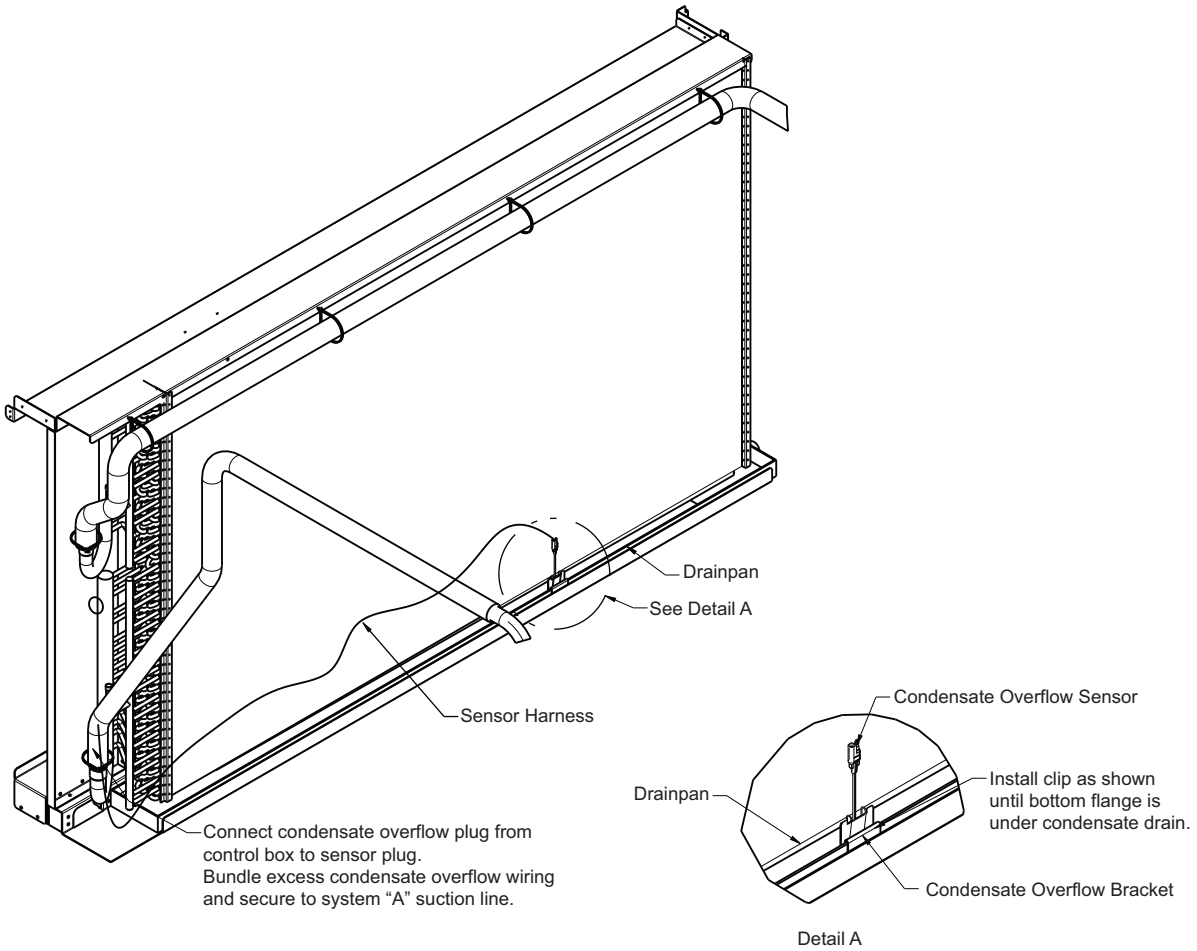


Fig. 11 — MRT Units Sensor Location

Switch wiring for MRT units with CTB (Central Terminal Board)

1. Remove control box cover panel.
2. Refer to install condensate overflow switch section on page 7 for harness routing.
3. Install controller on bracket (Item No. 5) and screw to control box with harness facing right, using screws (Item No. 8).
4. Connect condenser switch with harness (Item No. 2) to Remote Shut Down. See Fig. 12.
5. Connect harness to CTB board on control box as shown in Fig. 13.
6. Cut jumper.

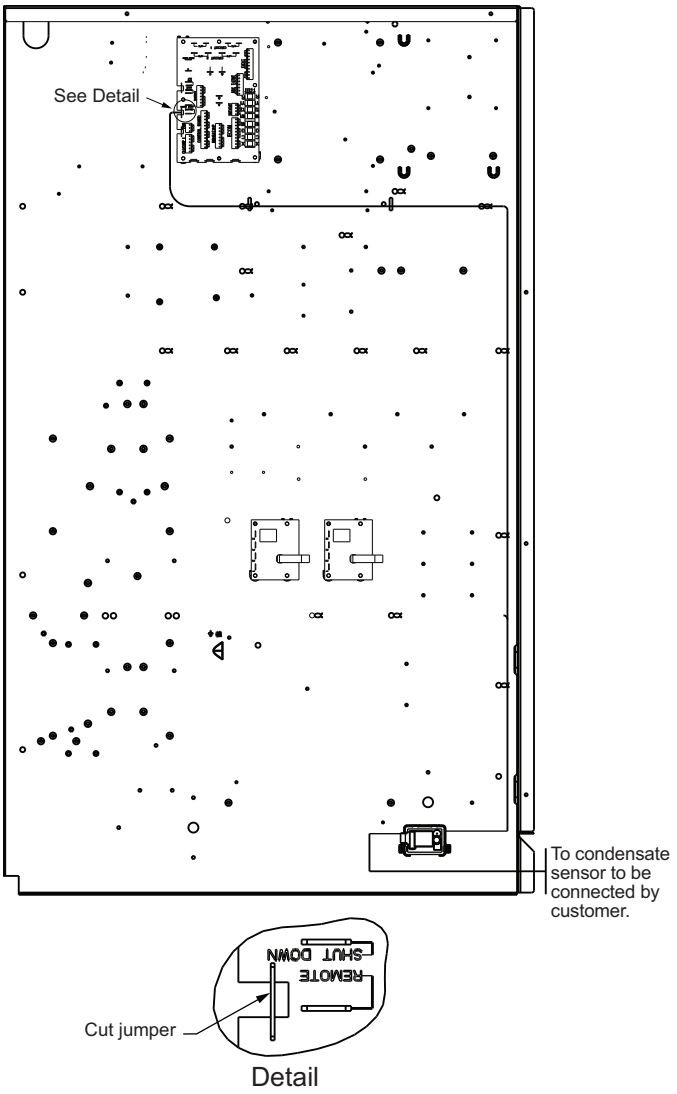


Fig. 12 — Remote Shutdown Connection for CTB Units

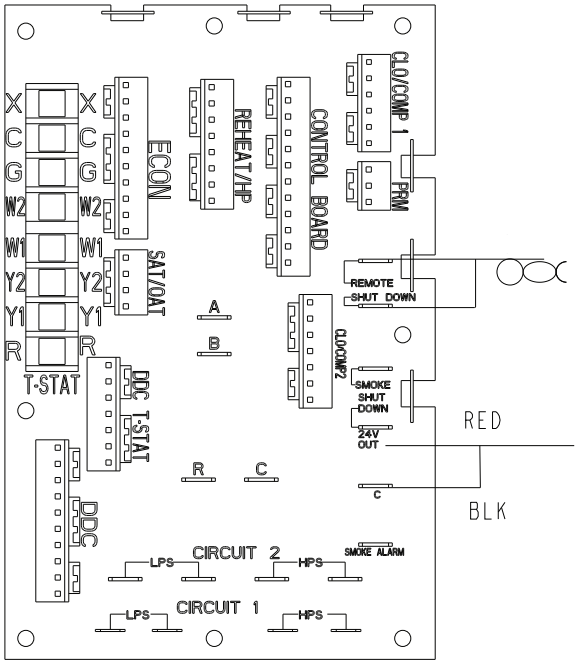


Fig. 13 — CTB Connection Diagram Detail

Switch wiring for MRT units with ISC (Integrated Staged Control Board)

1. Remove control box cover panel.
2. Refer to install condensate overflow switch section on page 7 for harness routing.
3. Install controller on bracket (Item No. 5) and screw to control box with harness facing right, using screws (Item No. 8).
4. Connect condenser switch with harness (Item No. 2) by connecting corresponding harness colors.
5. Connect harness to ISC board on control box as shown in Fig. 14 and 15. The red and black wires are connected to terminals 4 and 6 from terminal board 4. Violet and gray wires are connected to the overflow terminals from ISC board.
6. Cut jumper.

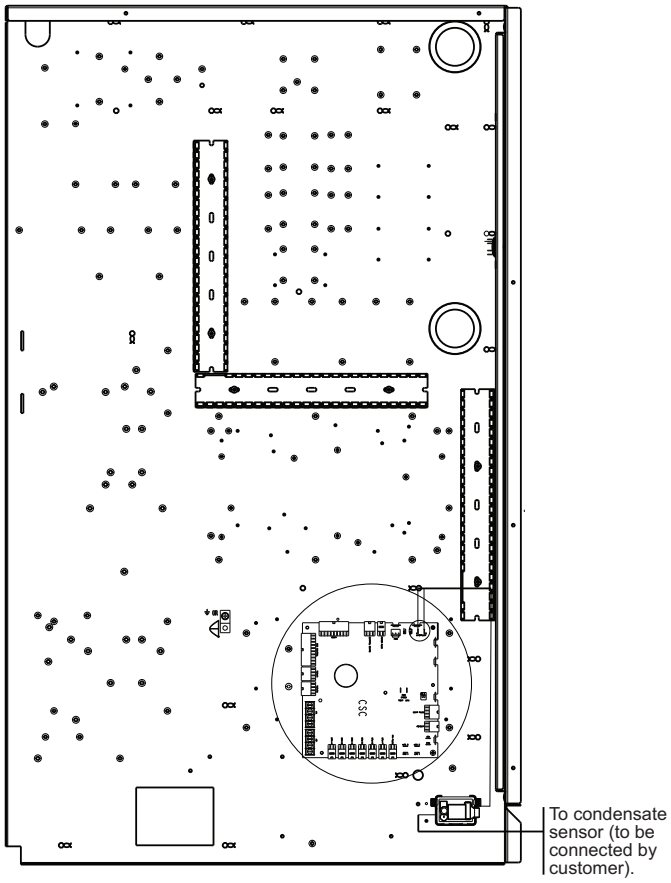
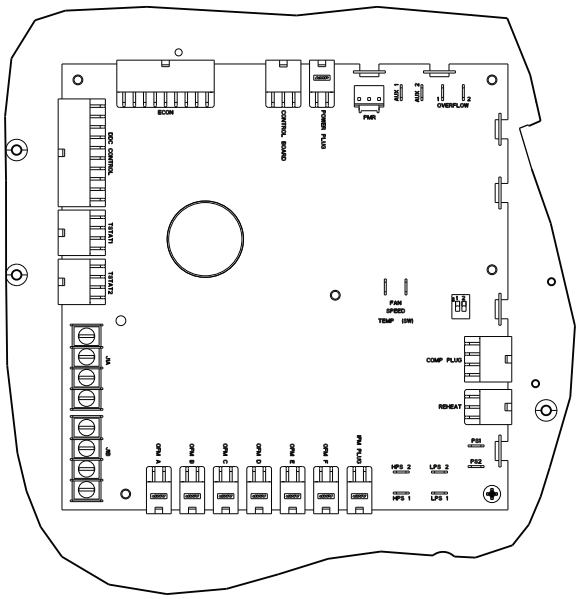


Fig. 14 — ISC Unit Connection Diagram



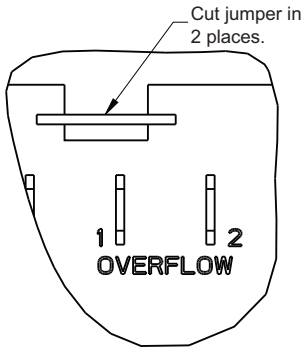


Fig. 15 — ISC Main Circuit Board

Switch wiring for MRT units with SystemVu™ Controller

1. Remove control box cover panel.
2. Refer to install condensate overflow switch section on page 7 for harness routing.
3. Install controller on bracket (Item No. 5) and screw to control box with harness facing right, using screws (Item No. 8).
4. Connect condenser switch with harness (Item No. 3) by connecting the corresponding harness colors
5. Route wire as describe in the install condensate overflow switch section Steps 1-6.
6. Connect harness (Item No. 3) to SystemVu controller on control box in terminal J4 as shown in Fig. 16 and 17.

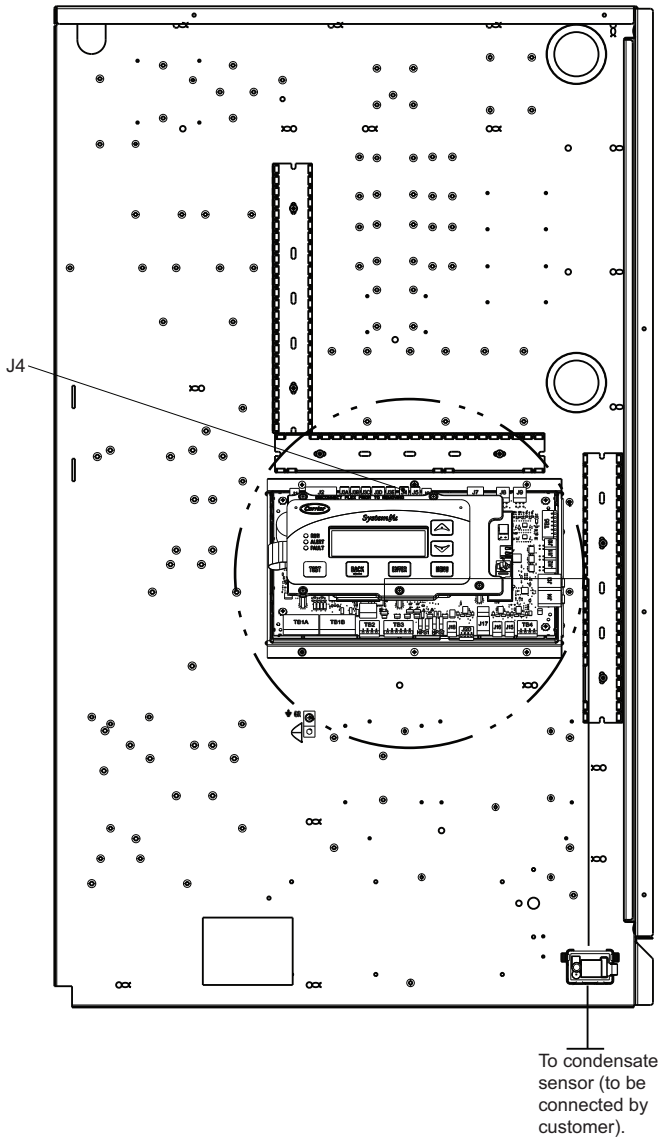


Fig. 16 — SystemVu Controller Units Connection Diagram

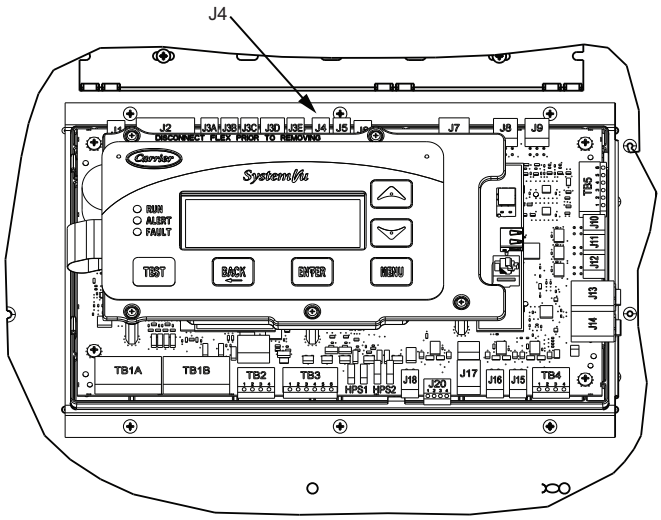


Fig. 17 — J4 Location on SystemVu Controller (Detail View)

Switch wiring for MRT units with UCB (Unit Control Board)

1. Remove control box cover panel.
2. Refer to install condensate overflow switch section on page 7 for harness routing.
3. Connect Condenser switch with harness (Item No. 2) by connecting corresponding harness colors.
4. Connect harness to UCB board on control box, see Fig. 18. The red and black wires are connected to the R and C terminals. Gray and violet wires are connected to remote shutdown. See Fig. 18.
5. Connect the gray and violet wires to the LPS gray and orange connections. See the Condensate Only detail in Fig. 18.

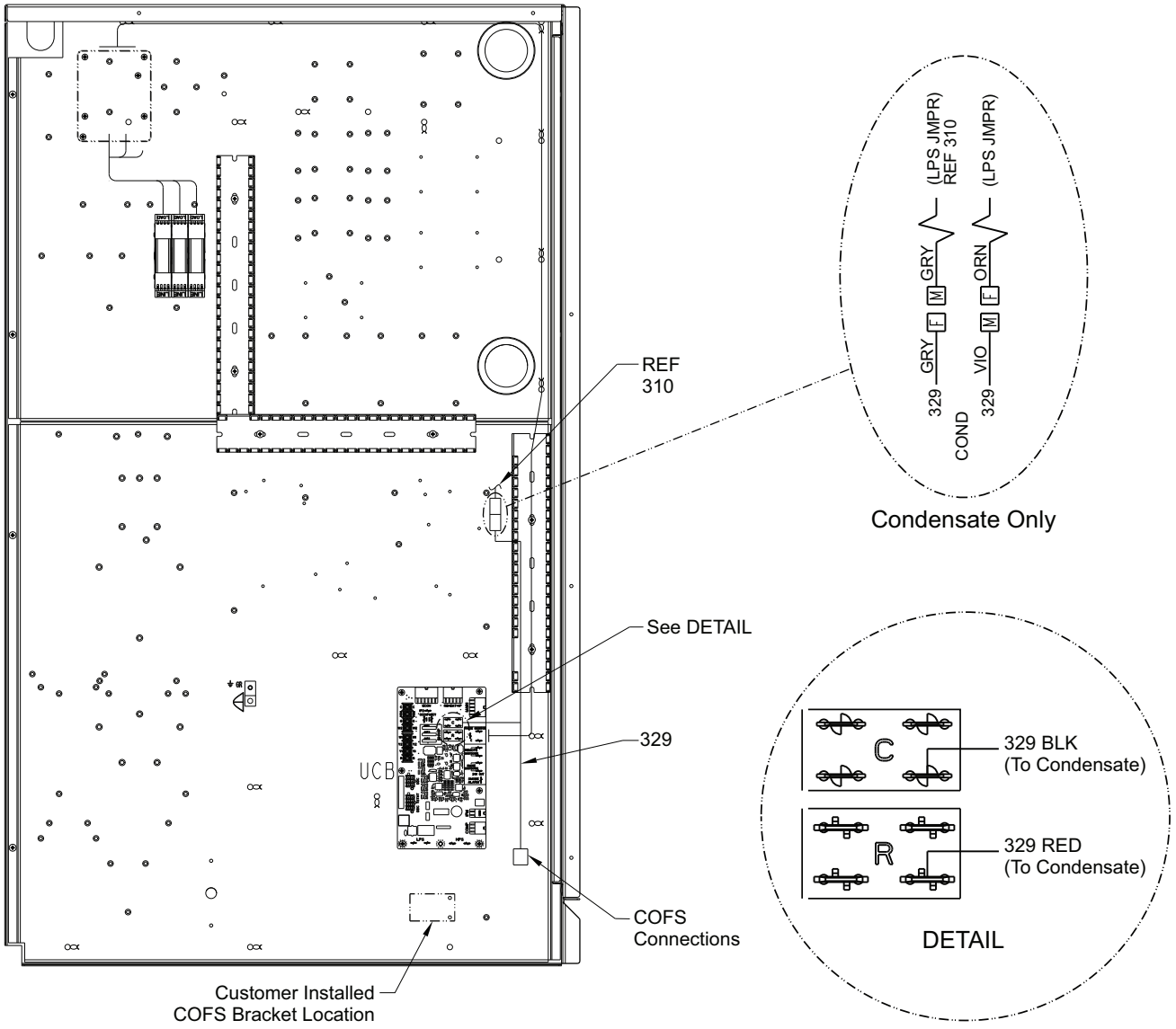


Fig. 18 — UCB Unit Component Layout

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