

**INSTALLATION INSTRUCTIONS FOR DANFOSS RTC DDC LB-114470G (86W95)
 USED WITH SCC/SGC UNITS**

Shipping & Packing List

Package 1 of 1 contains:

- 1 - Danfoss RTC DDC assembly (A1)
- 1 - Return air sensor (A2) with P62 connector
- 1 - Discharge air sensor (RT1) with P63 connector
- 1 - Bracket, DDC controls
- 1 - Bag assembly containing:
 - 4 - #8-32 X 1/2" screws
 - 1 - Wiring diagram sticker
 - 6 - #10-16 X 5/8" screws

Application

The Danfoss RTC DDC is used with SCC/SGC series units.

An A2 return air sensor monitors return air temperature and provides input to the DDC to determine unit heating or cooling function.

An A74 room air sensor is used to monitor space temperature. Do not install the return air sensor if a room air sensor is used. The room air sensor is wired to the Prodigy® control by the controls contractor.

The RT1 discharge air sensor monitors discharge or supply air temperature.

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause personal injury, loss of life, or damage to property.

Installation and service must be performed by a qualified installer or service agency.

⚠ CAUTION

Physical contact with metal edges and corners while applying excessive force or rapid motion can result in personal injury. Use caution when working near these areas during installation or while servicing this equipment.

⚠ WARNING



Electric shock hazard.

Can cause injury or death.

Before attempting to perform any service or maintenance, turn the electrical power to unit OFF at disconnect switch(es).

Unit may have multiple power supplies.

Installation

1. Disconnect all electrical power to unit.
2. Open compressor section access doors.
3. Depending on the size of unit, perform step 4 or 5.
4. **036, 060, 120 Units:**—Position DDC hinged mounting panel as shown in figure 1. Make sure the DDC faces the A55 Prodigy control board. Align holes on hinged bracket with dimples on the unit side. Secure DDC panel to unit with two 5/8" screws.

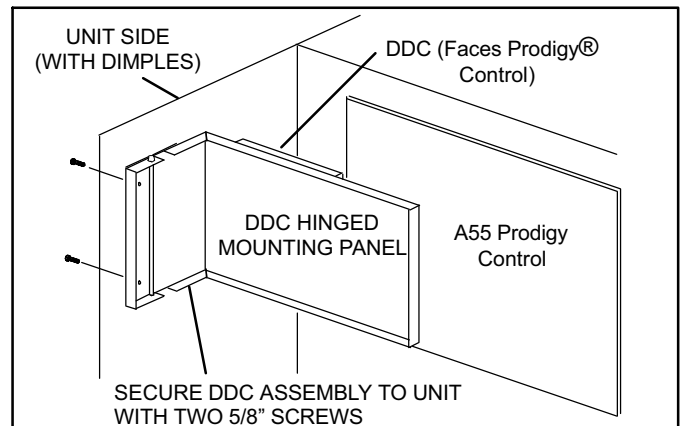


Figure 1. 036, 060, 120 Units - Installing DDC Hinged Mounting Panel



Pivot hinged panel away from Prodigy® control board to access the DDC. See figure 2.

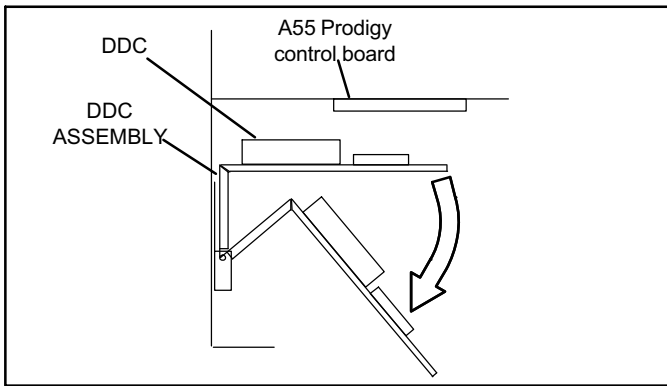


Figure 2. 036, 060, 120 Units - Accessing DDC (Top View)

5. **240 Units:**—Attach the hat section provided in the kit to the DDC assembly using two 5/8" screws (see figure 3.)

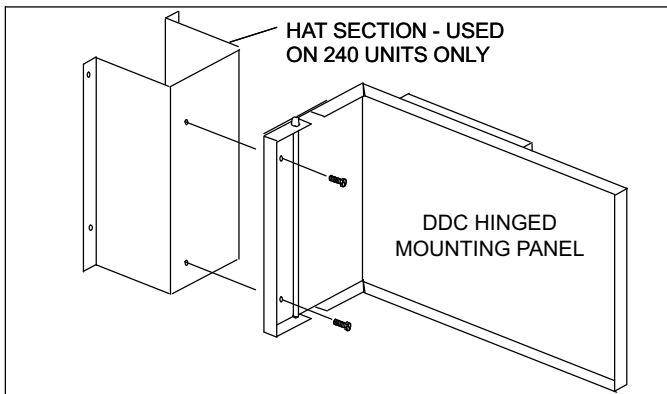


Figure 3. 240 Units - Attaching DDC Hinged Mounting Panel to Hat Section

Position the DDC assembly as shown in figure 4. Make sure the DDC faces the A55 Prodigy control board. Align holes on hat section with dimples on the unit side. Secure hat section to unit with four 5/8" screws.

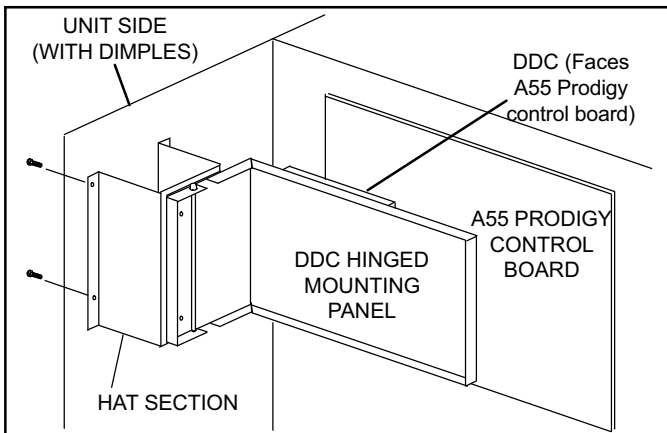


Figure 4. 240 Units - Installing DDC/Hat Section

Pivot hinged panel away from A55 Prodigy control board to access DDC (see figure 5).

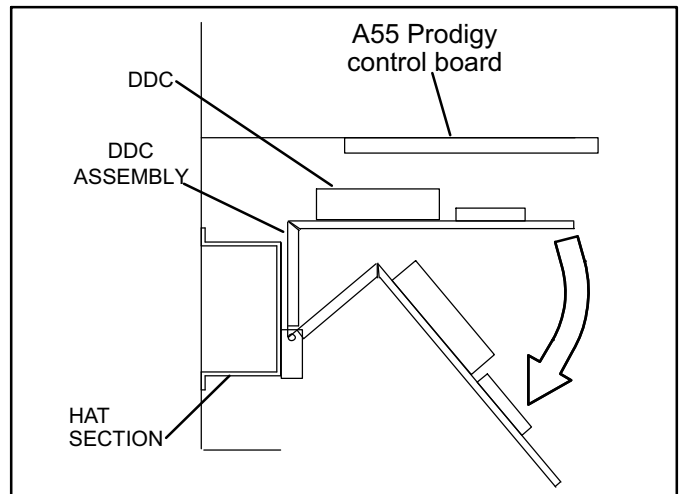


Figure 5. 240 Units - Accessing DDC (Top View)

Route harnesses coming from sub-assembly as shown in figure 6 for the following steps 1 through 3.

1. Disconnect J264C from M2 board and connect to P303 of controller sub-assembly.
2. Connect connectors (J297A, B and C) to M2 board J297.
3. Route J63 Harness through conduit bushing.
4. Route harnesses coming from DDC Control sub-assembly J63 down to lower blower support panel. SCC/SGC 036/060 units: see Figure 7. SCC/SGC 120/240 units: see Figure 8.
5. Route J62 Harness over top of blower section and in-front of evaporator coil.
6. Continue to route J62 inside conduit on-top of filter rack toward filter access door and economizer section. See figure 9.

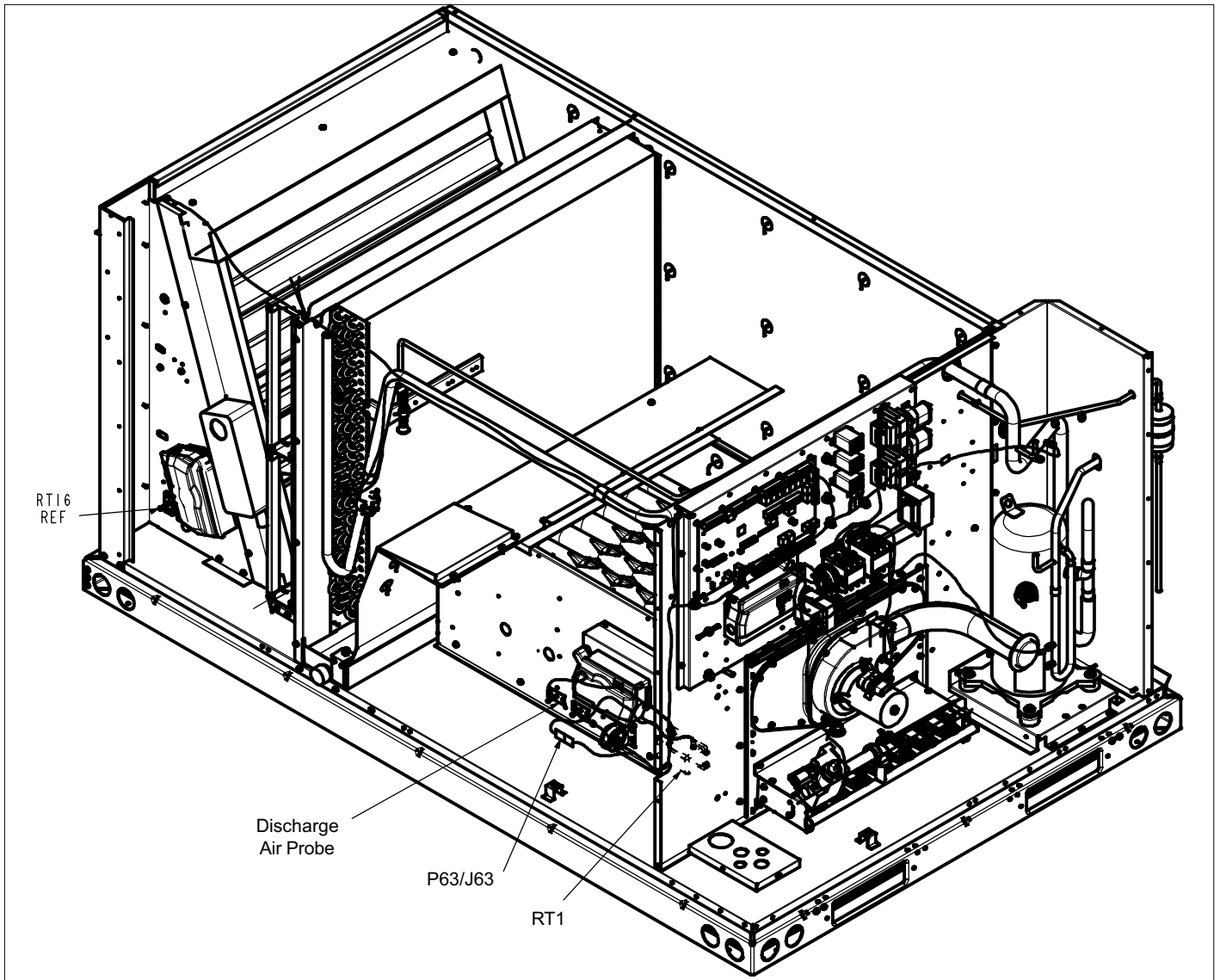


Figure 7. Routing J63 RT1 Harness (036,060 Units)

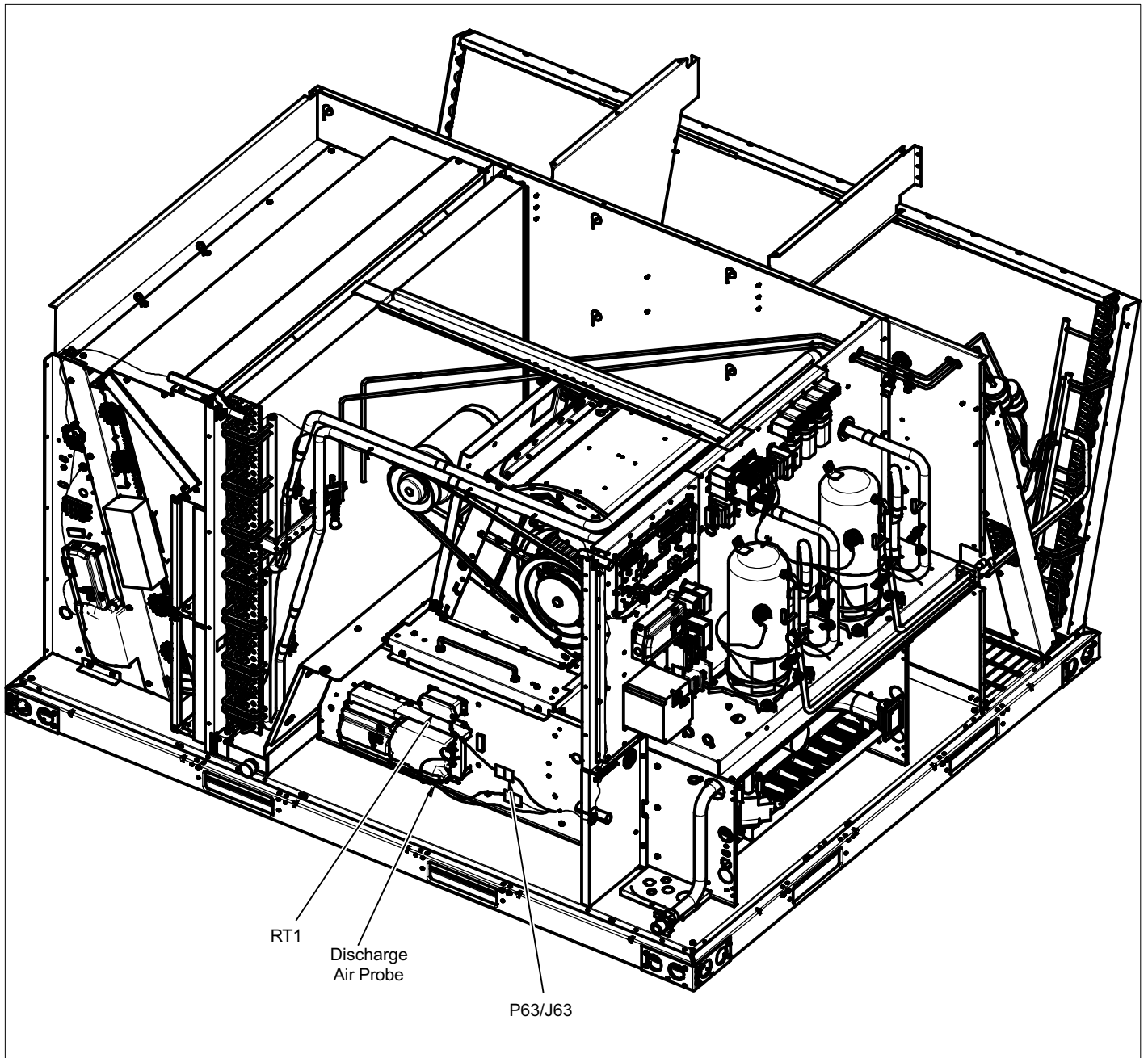


Figure 8. Routing J63 RT1 Harness (120,240 Units)

Return Air Sensor

1. Open filter access door.
2. Insert return air sensor probe into hole (location shown in figure 9). Secure with screws provided.
3. Connect A2 return air sensor plug P62 to A2 return air sensor jack J62.

NOTE - When an optional field-provided A74 room air sensor is installed, the controls contractor wires the sensor to Prodigy Controller P298 Terminal Strip. Do not install the return air sensor in these applications.

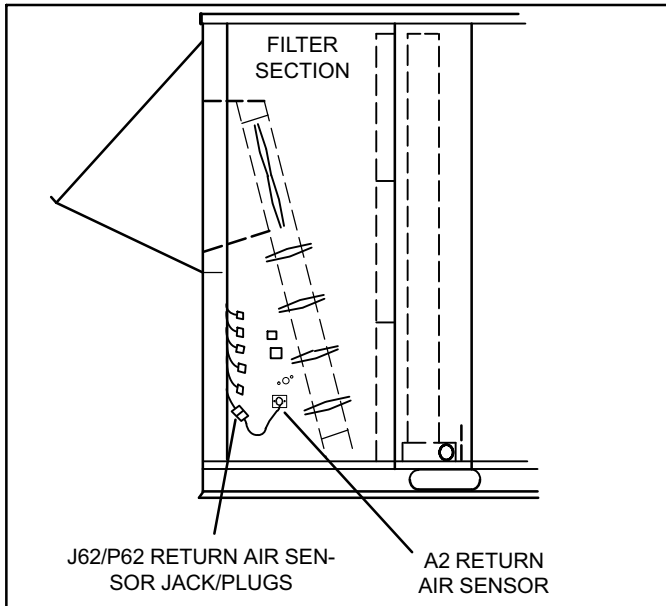


Figure 9. Return Air Sensor

Discharge Air Sensor RT1

1. Insert discharge air sensor probe into knockout as shown in figure 10 (036, 060 units) or figure 11 (120, 240 units). Secure with two screws provided.

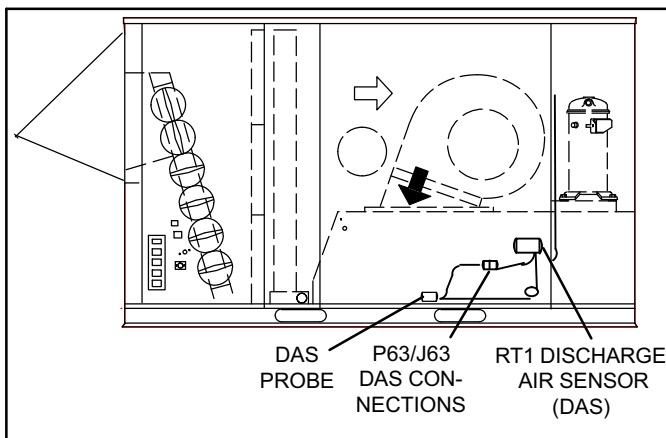


Figure 10. RT1 Discharge Air Sensor (036, 060 Units)

2. Connect RT1 discharge air sensor plug P63 to RT1 discharge air sensor jack J63.

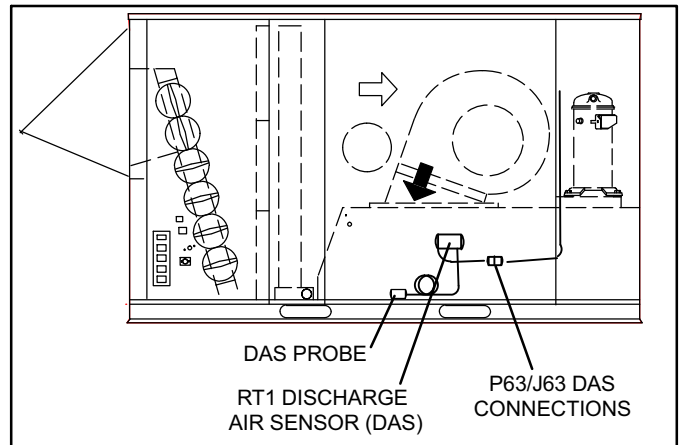


Figure 11. RT1 Discharge Air Sensor (120, 240 Units)

Wiring

Field Wiring

Controls contractor completes field wiring connections to optional system components shown in dotted lines in figure 13.

Wiring Diagrams

Wiring diagram sections are affixed to inside of unit panel in alpha-numeric order. Figure 12 shows an example of a complete system diagram on an installation consisting of an SGA240 unit with an electro-mechanical or electronic control system and a modulating economizer. Affix the "C7" section wiring diagram, provided, over the top of the existing "C" section wiring diagram.

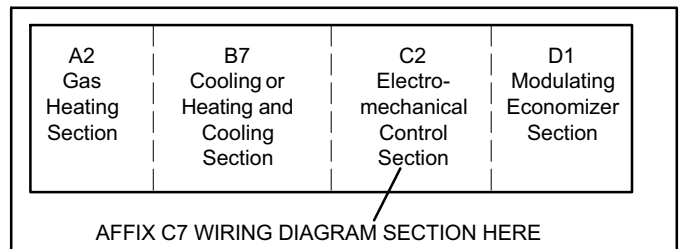
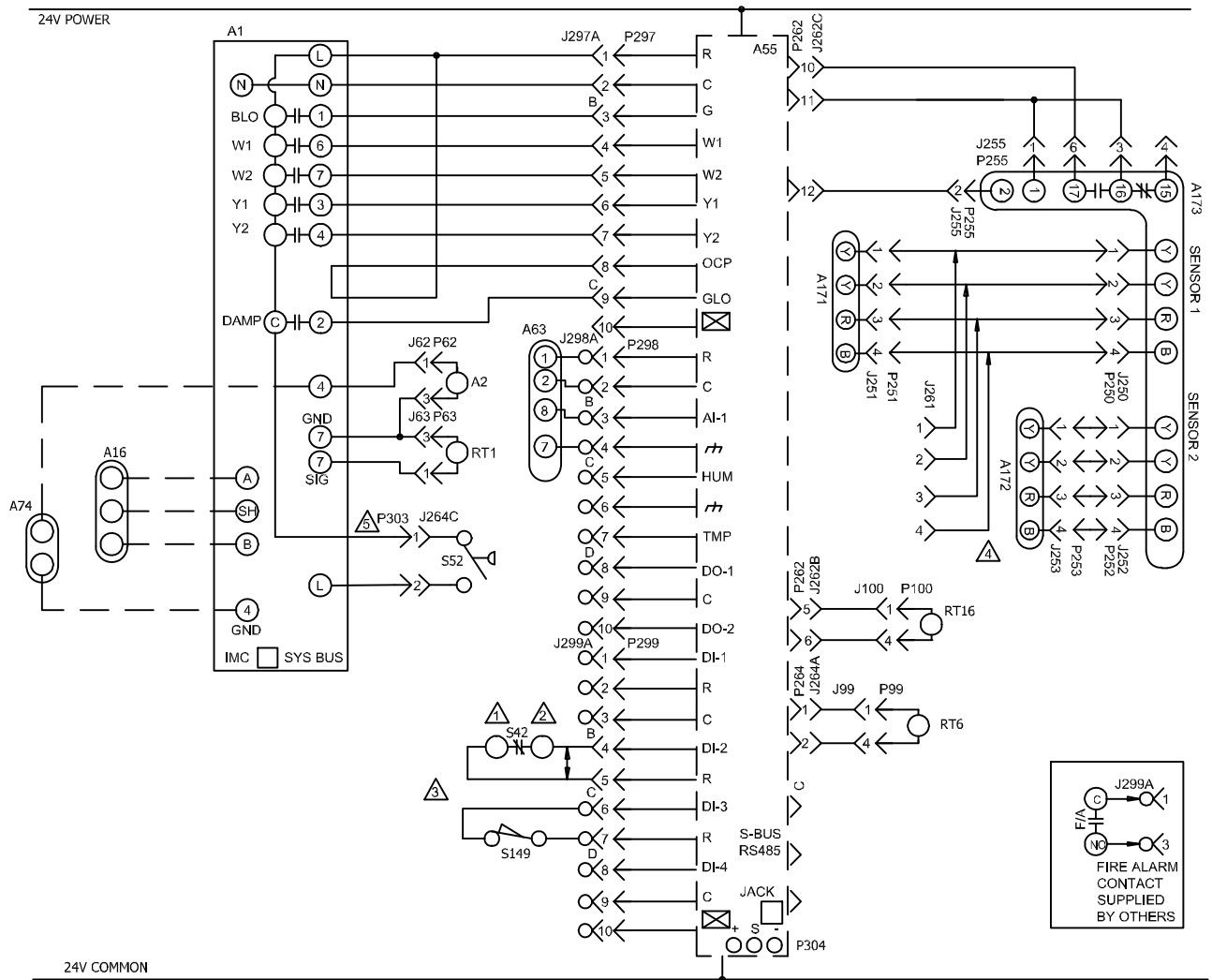


Figure 12. Complete System Diagram

Final Wiring Check

Before applying power to unit check the following wiring:

1. Jack/plug connections to DDC and RT1 sensor.
2. Jack/plug connections to system options such as electric heat or economizers.
3. Polarity of wiring between A16 control microprocessor, room air sensor if used, and TB1 terminal strip.
4. Line voltage to unit and/or options such as electric heat.



KEY	COMPONENT
A1	PANEL LOGIC
A2	SENSOR, ELECTRONIC
A16	CONTROL MICROPROCESSOR
A55	PANEL, MAIN
A63	SENSOR, CO2 (IAQ) OPTIONAL
A74	SENSOR, ROOM
A171	SENSOR ONE, SMOKE, RETURN AIR
A172	SENSOR TWO, SMOKE, SUPPLY AIR
A173	MODULE, CONTROL SMOKE DETECTION
RT1	SENSOR, DISCHARGE AIR
RT6	SENSOR, A55 DISCHARGE AIR (IMC)
RT16	SENSOR, RETURN AIR TEMP
S42	SWITCH, OVERLOAD RELAY BLOWER MOTOR LO
S52	SWITCH, AIRFLOW
S149	SWITCH, OVERFLOW

- ⚠ FOR MOTORS WITH S42 AND S135 EXTERNAL OVERLOAD WITH A55 (UNIT CONTROLLER)
- ⚠ S42 HOOKUP FOR UNITS LESS INVERTER, SEE INVERTER WITH BYPASSING FOR S42 OR INVERTER ALARM INPUT HOOKUP
- ⚠ M2 SETTINGS NEED TO BE MODIFIED WHEN S42 OR S149 ARE INSTALLED
- ⚠ CONNECT A172 SENSOR TO J261 ON SUPPLY AIR SMOKE DETECTOR ONLY
- ⚠ WHEN FIELD INSTALLING DANFOSS RTC, UNPLUG J264C FROM M2 AND CONNECT TO P303 AS SHOWN

J/P	JACK/PLUG DESCRIPTION
62	RETURN SENSOR A2
63	DISCHARGE AIR SENSOR RT1
99	RT6 SUPPLY AIR SENSOR
100	RT16 RETURN AIR SENSOR
250	SMOKE DETECTOR ONE
251	SMOKE DETECTOR ONE
252	SMOKE DETECTOR TWO
253	SMOKE DETECTOR TWO
255	MODULE, CONTROL SMOKE DETECTION
261	SUPPLY SMOKE DETECTOR JUMPER
262	ECONOMIZER
264	BLOWER DECK
297	THERMOSTAT - DDC INTERFACE
298	IAQ INTERFACE
299	SAFETY INTERFACE
303	BLOWER PROVING SWITCH
304	SYS BUS

— DENOTES OPTIONAL COMPONENTS
 - - - CLASS II FIELD WIRING

	STRATEGOS WIRING DIAGRAM	11/11
	ACCESSORIES	
CONTROL FOR SG/SC UNITS WITH DANFOSS RTC		
SECTION C		REV 0
Supersedes 535814W	New Form No. 537477-01	
© 2011		Lennox Commercial

Figure 13. Control for SCC/SGC Units - Danfoss RTC

Check-Out Procedure

Connect jumpers or toggle switches between the DDC output terminals to simulate a thermostat demand and confirm proper unit operation. See figure 16. Refer to unit installation instruction and Prodigy Control manual provided with unit.

1. Disconnect 24V power connector **on DDC**.
2. Use Prodigy Control manual to troubleshoot and/or clear any errors codes from the Prodigy Control main board readout.
3. Install a jumper wire across fan output terminals C and NO.
4. Apply power to unit; blower will operate. Leave blower jumper in place throughout check-out.
5. Manually activate stages of heating and cooling with a jumper connection between terminal NO and C as follows:

HEAT 1	First-stage heating
HEAT 2	Second-stage heating
COOL 1	First-stage cooling
COOL 2	Second-stage cooling
DAMPER	Economizer

The corresponding indicating light on the A55 M2 main control board should turn on. This indicates that the Prodigy Control board is receiving a demand from the DDC. This also indicates that wiring between the DDC output terminal block and the Prodigy Control input terminal is correct for each function.

! IMPORTANT

Do not jumper cooling and heating outputs at the same time.

6. Turn off power.
7. Remove all jumpers or toggle switches.
IMPORTANT - All field installed jumpers or toggle switches should be removed after service has been completed to ensure that unit control has been switched back to the DDC.
8. Connect 24V power connector to DDC.
9. Restore power to unit. Check the SERVICE LED - Flashing or steady-ON indicates replace board; OFF indicates board OK.
10. Repeat check-out procedure if needed.

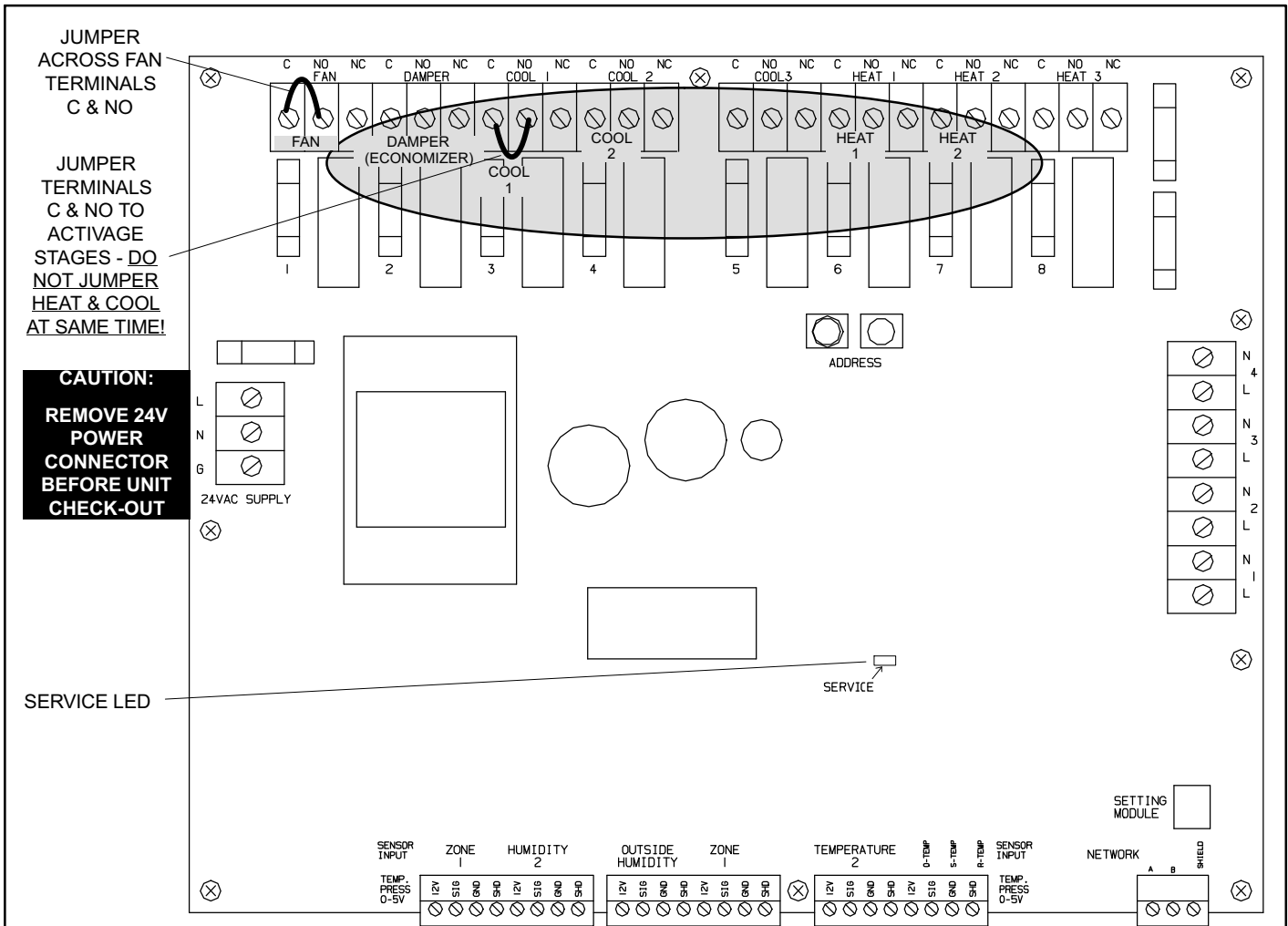


Figure 14. Danfoss RTC