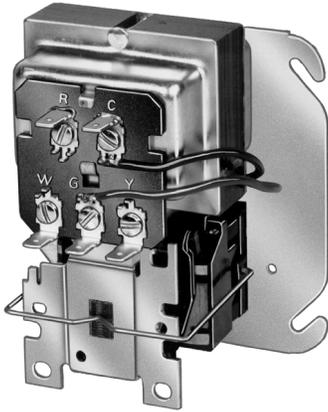




R8285A-G, J, K Control Centers

INSTALLATION INSTRUCTIONS



APPLICATION

R8285 Control Center provides low voltage control of line voltage fan motors and auxiliary circuits in heating, cooling, or air-conditioning systems.

FEATURES

- 120, 208/240, and 120/208/240 Vac models available.
- R8285A has spdt switching for two-speed fan motor applications.
- R8285B has dpdt switching for Total Comfort application with electronic air cleaner, humidifier, and blower motor.
- R8285C has spst switching for one-speed fan motor applications.
- R8285D has dpst switching for one-speed fan motor and limit controller applications.
- R8285E has dpst switching for two-speed fan motor and limit controller applications.

- R8285F has dpst switching for one-speed fan motor and auxiliary load applications.
- R8285G has spst switching for one-speed fan motor applications.
- R8285J,K allows the addition of an R8222 or R8228 Relay without rewiring. Used when a cooling system will be added later.
- 40 or 50 VA transformer powers low voltage control systems and provides overload protection.
- Low voltage terminal board provides convenient connections for thermostat and heating and cooling equipment control circuit wiring.
- Control center mounts on standard 4 x 4 inch square junction box.
- Relay is easily replaced without disturbing wiring.
- Ground screw provided on mounting plate.

SPECIFICATIONS

IMPORTANT:

The specifications given in this publication do not include normal manufacturing tolerances. Therefore, units may not exactly match the listed specifications. Also, this product is tested and calibrated under closely controlled conditions, and some minor differences in performance can be expected if those conditions are changed.

Standard Models:

R8285J Control Center has a receptacle and leadwires for spst and dpdt relays, less R8222 or R8228 relay. Used when cooling will be added later.

R8285K Control Center has a receptacle and leadwires for dpdt and dpst relays, less R8222 or R8228 relay. Used when cooling will be added later.

Transformer Ratings:

Power Rating: 40 or 50 VA.

Primary Voltage: Either 120, 208/240, or 120/208/
STANDARD MODELS



Table 1. R8285 Model Specifications.

Fan Center	Replacement Relay	Contact Rating		Switching	Input Voltage (Vac)	See Wiring Diagram
		AFL	ALR			
R8285A	R8222B	12	60	Spdt	120, 208/240, or 120/208/240 ^a	Fig. 2
R8285B	R8222D	12	60	Dpdt		Fig. 3
R8285C	R8222A	12	60	Spst		Fig. 4
R8285D	R8222U	12	60	Dpst		Fig. 5
R8285E	R8222F	12	60	Dpst		Fig. 6
R8285F	R8222C	12	60	Dpst		Fig. 5
R8285G	R8228A	16/18	96/72	Spst		Fig. 4
R8285J	R8222	12	60	Spst or Spdt		Fig. 7
	R8228	16/18	96/72			
R8285K	R8222	12	60	Dpst or Dpdt		Fig. 7
	R8228	16/18	96/72			

^a Specify when ordering.

Secondary Voltage for 40 VA at 1.67 Amps: 24 Vac.

Secondary Voltage for 50 VA at 2.08 Amps: 24 Vac.

Open Circuit Secondary Voltage: 27.0 volts.

Overload Protection: Inherent.

Voltage Frequency: 60 Hz.

Contact Ratings: Refer to Table 2 and 3 for contact ratings of both normally open and normally closed contacts.

Table 2. R8285A-F Contact Ratings.

Voltage	120 Vac	208/240 Vac
Full Load (amp)	12	6
Locked Rotor (amp)	60	35

Table 3. R8285G Contact Ratings.

Voltage	120 Vac	208/240 Vac
Full Load (amp)	16/18	18
Locked Rotor (amp)	96/72	72

Relay Coil Ratings:

Inrush: 20 VA maximum.

Sealed: 9 VA.

Wattage: 5 watts.

Pickup Voltage: Must pick up below 18 volts.

(R8285A1022 must pick up below 176 volts.)

Pilot Duty Ratings for R8285d Pilot Duty Pole:

Minimum: 3 VA at 24, 120, 240, and 480 Vac.

Maximum: 25 VA at 24 Vac, 125 VA at 120, 240, and 480 Vac.

Resistive: 3 amps at 277 Vac (0.75 power factor).

Powerpile® (Millivoltage): The normally open pilot duty contacts are rated for Powerpile (Millivoltage) applications: 0.25 amp at 0.25 to 12 Vdc.

Transformer Primary Leadwire Color Code:

Black and White: 120V.

Black-Common: 208/240V.

Red: 208V.

Orange: 240V.

Leadwire Color Codes: Refer to Table 4 for leadwire color codes.

Leadwires: 11 inch color-coded leadwires.

Relay Coil Leadwire Color Code: Black lead connected to C terminal and blue lead connected to G terminal.

Power Consumption: 11.0 watts maximum.

Contacts: Silver cadmium oxide.

Mounting: Mounts on standard 4 inch square junction box.

Dimensions: Refer to Fig. 1 for installation dimensions.

Underwriters Laboratories Inc. Listed: File No. E113671

Canadian Standards Association Component Recognized:

R8285A-G: File No. LR85839

R8222 (all models): File No. LR35066.

Table 4. Leadwire Color Codes.

Model	Switching	Pole	Leadwire Color
R8285A	Spdt	—	Black—Common Red—N.O. Contact Brown—N.C. Contact
R8285B	Dpdt	Pole 1	Black—Common Red—N.O. Contact Brown—N.C. Contact
		Pole 2	Violet—Common Red/Yellow—N.O. Contact Yellow—N.C. Contact
R8285C	Spst	—	N.O. Contact—Black leadwires
R8285D	Dpst	Pole 1 (power pole)	N.O. Contact—Black leadwires
		Pole 2 (pilot duty pole)	N.O. Contact—Red leadwires
R8285E	Dpst	Pole 1	N.O. Contact—Black leadwires
		Pole 2	N.C. Contact—Red leadwires
R8285F	Dpst	Pole 1	N.O. Contact—Black leadwires
		Pole 2	N.O. Contact—Red leadwires
R8285G	Spst	—	N.O. Contact—Black leadwires
R8285J	Spst, Spdt	Refer to Fig. 7	
R8285K	Dpst, Dpdt		

External Load: R8285 will operate the following typical Resideo relay and/or contactor loads with up to 300 feet of No. 18 gauge wire (150 ft. run). The maximum load for each application is:

- Two R8222 Switching Relays.
- Two R8242 Contactors.
- One R8222 Switching Relay and one R8242 Contactor.
- One R8242 Contactor and one R8093 Thermal Delay Relay.
- One R8210, R8212, or R8214 Contactor and one R8222 Relay.
- One R8210, R8212, or R8214 Contactor and one R8093 Thermal Delay Relay.

Accessories: The R8285A-G function can be achieved by adding the appropriate R8222 or R8228 Relay into an R8285J,K. Order the appropriate relay using Table 1 and Fig. 2 through 6.

R8285 Cross Reference:

R8285A replaces:

Resideo	RBM	White Rodgers	MARS
R8285A,C	90-113	8A94-2	24013
R8239A,C			
R8227A,B			
R856B			
R8102			

R8285B replaces:

Resideo Fan Centers	Resideo Transformers	Resideo Relays
R8285A,B,C,E,F	AT72D	R8222
R8239A,B,C,E,F	AT40	R8225
R8226A,B,C	AT30A	
R8227A,B,C	AT20	
R856B	AT12	
R8102		
	White Rodgers	MARS
	8A94-51	24010

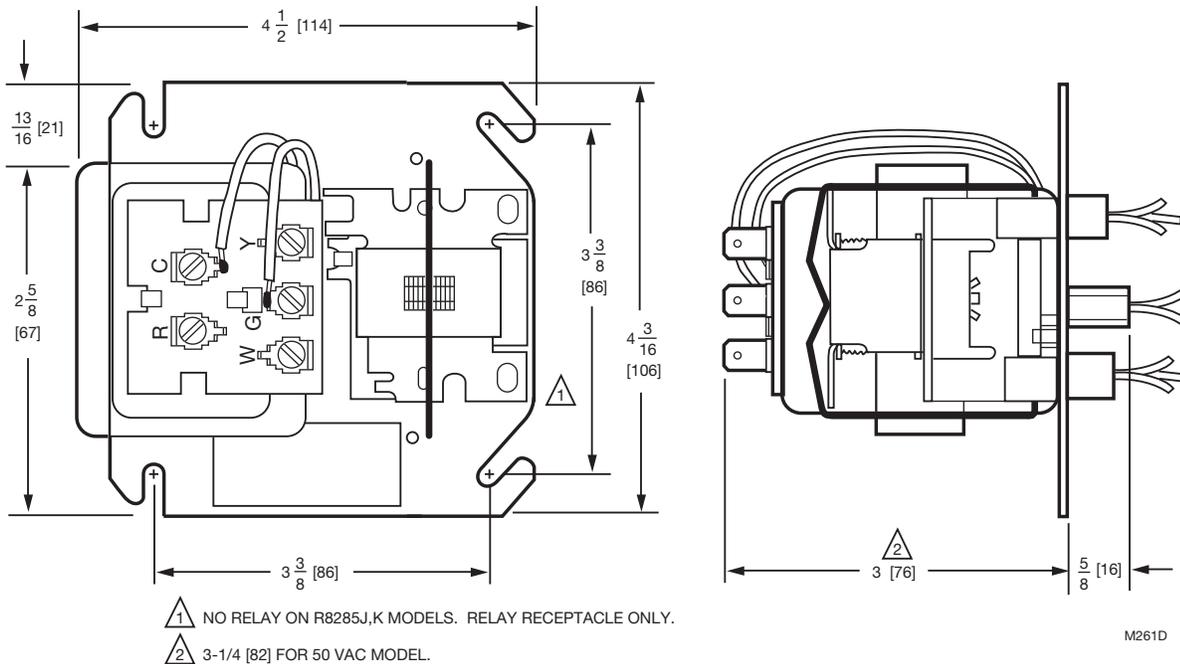


Fig. 1. R8285 installation dimensions in in. [mm].

INSTALLATION

When Installing this Product...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in these instructions and on the product to assure the product is suitable for your application.
3. Assure installer is a trained, experienced service technician.
4. After completing installation, use these instructions to check product operation.

CAUTION
Disconnect power supply before beginning installation to prevent electrical shock and equipment damage.

Mounting

The R8285 mounts on a standard four inch square junction box. Make wiring connections in the junction box, then fasten the R8285 to the junction box by placing the junction box screws through the notches in the R8285 mounting plate.

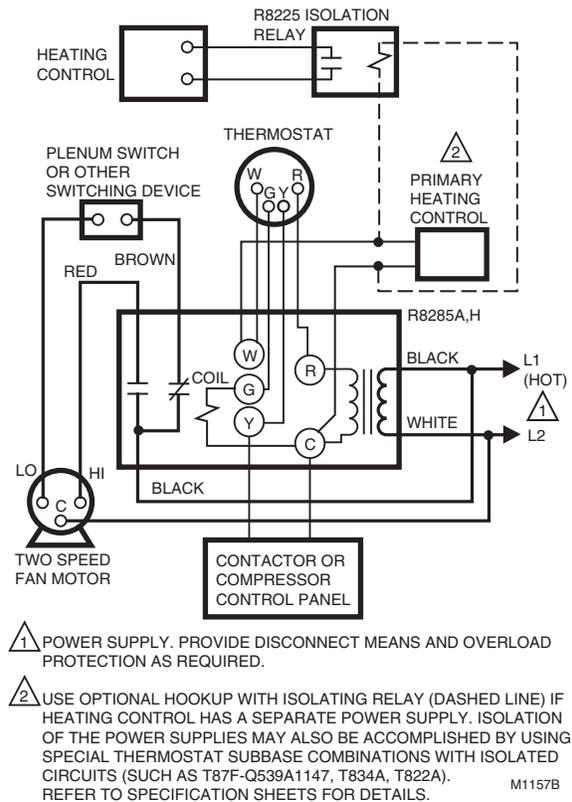


Fig. 2. R8285A typical hookup in two-speed fan motor application.

NOTE: The R8285 must be mounted in an enclosure. The R8285 may be mounted in any position except with the mounting plate horizontal and the relay on top of the mounting plate.

WIRING

All wiring must comply with local codes and ordinances. Refer to manufacturer instructions or Fig. 2 through 6 for typical wiring diagrams.

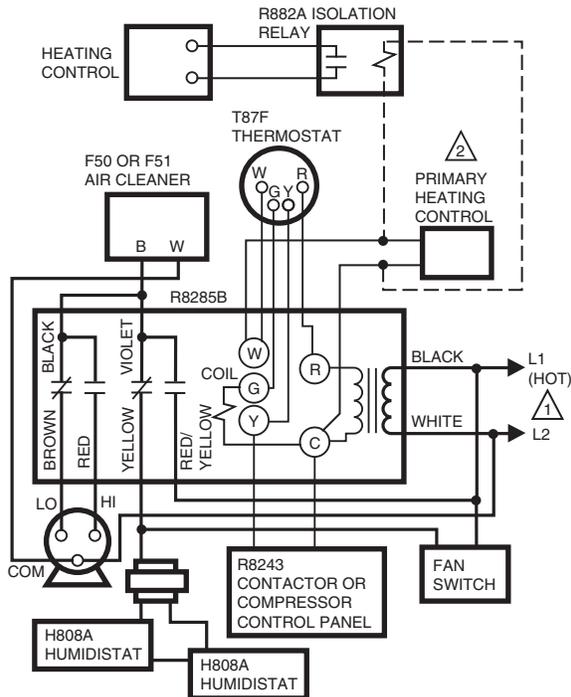
IMPORTANT:

Use only Underwriters Laboratories Inc. listed connectors when making external circuit connections to the line voltage leadwires of this device.

Mounting and Wiring R8285J and K Models

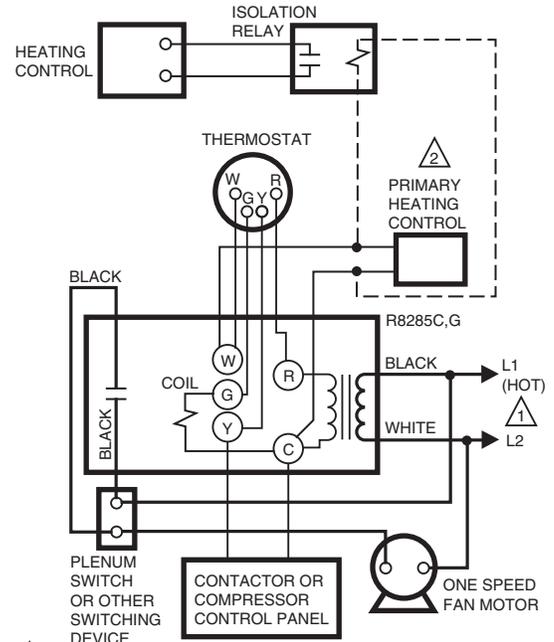
R8285J,K are plate-mounted relay receptacles with leadwires for R8222 and R8228 Relays. Insert the required leadwires in the relay receptacle as follows:

1. Determine the leadwire colors required for the desired relay and application. Refer to Fig. 7.
2. Push the leadwire terminal into the receptacle plate from the side stamped with the color code. Refer to Fig. 8. The tang on the quick-connect terminal must align with the small clearance slot in the terminal opening.
3. Press the relay into the relay receptacle until it locks in place. Refer to Fig. 9.
4. Secure new relay to receptacle with enclosed retaining bail. Refer to Fig. 9.



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 USE OPTIONAL HOOKUP WITH ISOLATING RELAY (DASHED LINE) IF HEATING CONTROL HAS A SEPARATE POWER SUPPLY. ISOLATION OF THE POWER SUPPLIES MAY ALSO BE ACCOMPLISHED BY USING SPECIAL THERMOSTAT SUBBASE COMBINATIONS WITH ISOLATED CIRCUITS (SUCH AS T87F-Q539A1147, T834A, T822A). REFER TO SPECIFICATION SHEETS FOR DETAILS. M1153C

Fig. 3. R8285B typical hookup with twospeed fan motor Total Comfort application.



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 USE OPTIONAL HOOKUP WITH ISOLATING RELAY (DASHED LINE) IF HEATING CONTROL HAS A SEPARATE POWER SUPPLY. ISOLATION OF THE POWER SUPPLIES MAY ALSO BE ACCOMPLISHED BY USING SPECIAL THERMOSTAT SUBBASE COMBINATIONS WITH ISOLATED CIRCUITS (SUCH AS T87F-Q539A1147, T834A, T822A). REFER TO SPECIFICATION SHEETS FOR DETAILS. M1152B

Fig. 4. R8285C,G typical hookup in onespeed fan motor application.

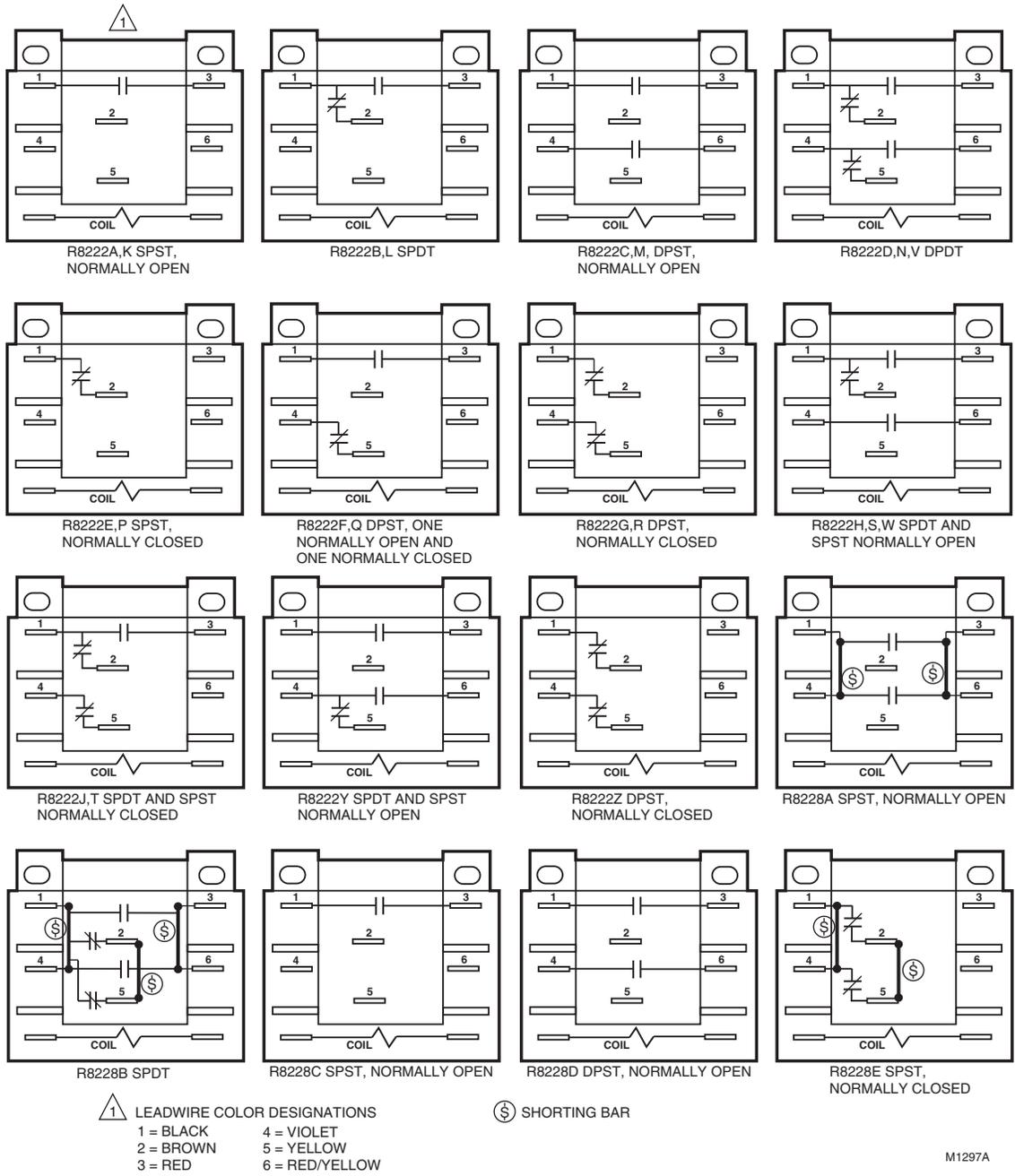


Fig. 7. R8285J,K Relay receptacle wiring diagrams with typical relays and applications.

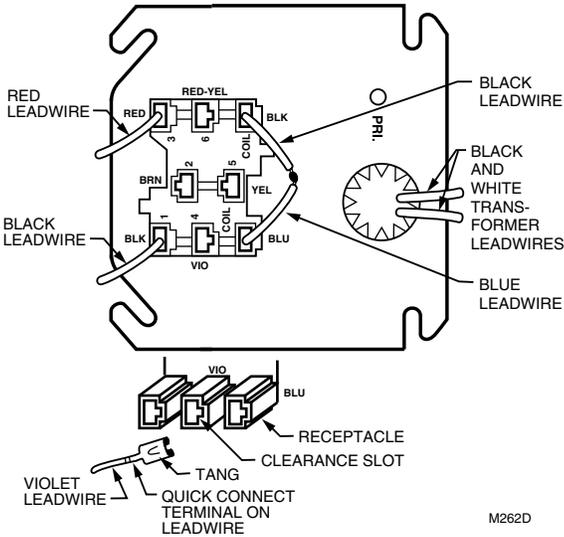


Fig. 8. R8285J,K Relay receptacle leadwire installation.

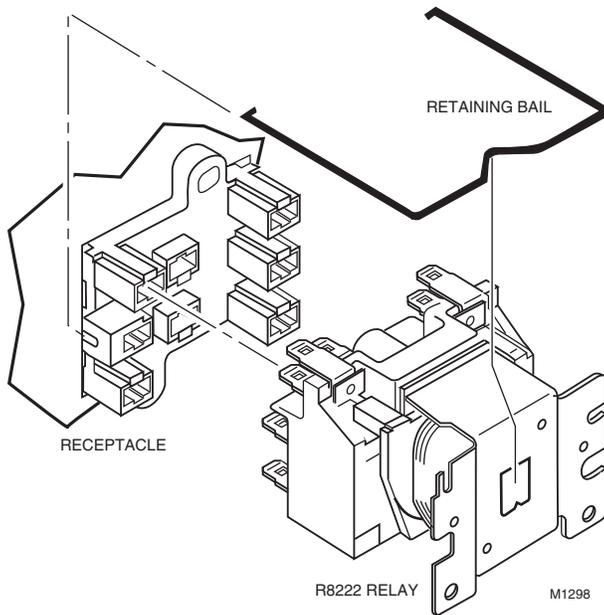


Fig. 9. Mounting relay to R8285J,K Relay receptacle.

OPERATION

The R8285 operation is determined by the thermostat. In one-speed fan motor applications, a call for heat from the thermostat activates the heating control and the R8285 coil. The coil switches the fan motor to low speed by closing the normally open spst relay switch. The closed relay switch supplies power to the low speed fan motor.

In two-speed fan motor applications, the fan motor operates at low speed until the thermostat calls for heat. A call for heat activates the heating control and the R8285 coil. The coil switches the fan motor from low to high speed by opening the normally closed relay switch and closing the normally open relay switch. The closed relay switch supplies power to the high speed fan motor.

CHECKOUT

Always conduct a thorough checkout when installation is complete. Operate the system through at least one complete cycle to assure the system equipment and the R8285 operate as intended.

SERVICE



CAUTION

Disconnect the power supply before servicing to prevent electrical shock and equipment damage.

The R8285 relay is field replaceable. Replace relay as follows:

1. Refer to Table 1 for the appropriate replacement relay.
2. Remove the plug-in relay from the receptacle and replace with the new relay.



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