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

- 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.

CONTENTS

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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.

TRADELINE® MODELS
TRADELINE models are selected and packaged for ease of handling, ease of stocking, and maximum replacement value. TRADELINE model specifications are the same as those of standard models, except as noted.

STANDARD MODELS

TABLE 1—R8285 MODEL SPECIFICATIONS.

<table>
<thead>
<tr>
<th>Fan Center</th>
<th>Replacement Relay</th>
<th>Contact Rating</th>
<th>Switching</th>
<th>Input Voltage (Vac)</th>
<th>See Wiring Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>R8285A</td>
<td>R8222B</td>
<td>12</td>
<td>60</td>
<td>Spdt</td>
<td>120, 208/240</td>
</tr>
<tr>
<td>R8285B</td>
<td>R8222D</td>
<td>12</td>
<td>60</td>
<td>Dpdt</td>
<td>208/240 or 120/208/240</td>
</tr>
<tr>
<td>R8285C</td>
<td>R8222A</td>
<td>12</td>
<td>60</td>
<td>Spst</td>
<td></td>
</tr>
<tr>
<td>R8285D</td>
<td>R8222U</td>
<td>12</td>
<td>60</td>
<td>Dpst</td>
<td></td>
</tr>
<tr>
<td>R8285E</td>
<td>R8222F</td>
<td>12</td>
<td>60</td>
<td>Dpst</td>
<td></td>
</tr>
<tr>
<td>R8285F</td>
<td>R8222C</td>
<td>12</td>
<td>60</td>
<td>Dpst</td>
<td></td>
</tr>
<tr>
<td>R8285G</td>
<td>R8228A</td>
<td>16/18</td>
<td>96/72</td>
<td>Spst</td>
<td></td>
</tr>
<tr>
<td>R8285J</td>
<td>R8222</td>
<td>12</td>
<td>60</td>
<td>Spst or Spdt</td>
<td></td>
</tr>
<tr>
<td>R8285K</td>
<td>R8222</td>
<td>12</td>
<td>60</td>
<td>Dpst or Dpdt</td>
<td></td>
</tr>
<tr>
<td>R8285K</td>
<td>R8228</td>
<td>16/18</td>
<td>96/72</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a Specify when ordering.

Ordering Information

When purchasing replacement and modernization products from your TRADELINE® wholesaler or distributor, refer to the Tradeline Catalog or price sheets for complete ordering number, or specify—

1. Order number.
2. Accessories, if desired.
3. Order additional system components and system accessories separately.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

1. Your local Home and Building Control Sales Office (please check the white pages of your phone directory).
2. Home and Building Control Customer Satisfaction
   Honeywell, Inc., 1885 Douglas Drive North
   Minneapolis, Minnesota 55422-4386 (612) 951-1000

In Canada—Honeywell Limited/Honeywell Limitee, 740 Ellesmere Road, Scarborough, Ontario M1P2V9. International Sales and Service Offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany,
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 Tables 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.

Maxima: 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 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.

### TABLE 4—LEADWIRE COLOR CODES.

<table>
<thead>
<tr>
<th>Model</th>
<th>Switching</th>
<th>Pole</th>
<th>Leadwire Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>R8285A</td>
<td>Spdt</td>
<td>—</td>
<td>Black—Common</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Red—N.O. Contact</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Brown—N.C. Contact</td>
</tr>
<tr>
<td>R8285B</td>
<td>Dpdt</td>
<td>Pole 1</td>
<td>Black—Common</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Red—N.O. Contact</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Brown—N.C. Contact</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pole 2</td>
<td>Violet—Common</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Red/Yellow—N.O. Contact</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Yellow—N.C. Contact</td>
</tr>
<tr>
<td>R8285C</td>
<td>Spst</td>
<td>—</td>
<td>N.O. Contact—Black leadwires</td>
</tr>
<tr>
<td>R8285D</td>
<td>Dpdt</td>
<td>Pole 1 (power pole)</td>
<td>N.O. Contact—Black leadwires</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pole 2 (pilot duty po</td>
<td>N.O. Contact—Red leadwires</td>
</tr>
<tr>
<td>R8285E</td>
<td>Dpdt</td>
<td>Pole 1</td>
<td>N.O. Contact—Black leadwires</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pole 2</td>
<td>N.O. Contact—Red leadwires</td>
</tr>
<tr>
<td>R8285F</td>
<td>Dpdt</td>
<td>Pole 1</td>
<td>N.O. Contact—Black leadwires</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pole 2</td>
<td>N.O. Contact—Red leadwires</td>
</tr>
<tr>
<td>R8285G</td>
<td>Spst</td>
<td>—</td>
<td>N.O. Contact—Black leadwires</td>
</tr>
<tr>
<td>R8285J</td>
<td>Spst, Spdt</td>
<td>Refer to Fig. 7</td>
<td></td>
</tr>
<tr>
<td>R8285K</td>
<td>Dpdt, Spdt</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
EXTERNAL LOAD: R8285 will operate the following typical Honeywell 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 Figs. 2 through 6.

R8285 CROSS REFERENCE:

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

**R8285B replaces:**

**Honeywell Fan Centers** | **Honeywell Transformers** | **Honeywell Relays**
---|---|---
R8285A,B,C,E,F | AT72D | R8222
R8239A,B,C,E,F | AT40 | R8225
R8226A,B,C | AT30A | R8225
R8227A,B,C | AT20 | R8225
R856B | AT12 | R8225
R8102 | | R8225

**White Rodgers** | **MARS**
---|---
8A94-51 | 24010

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

**NO RELAY ON R8285J,K MODELS. RELAY RECEPTACLE ONLY.**

**3 1/4 [82] FOR 50 VAC MODEL.**
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. Assume 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.

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

Fig. 3—R8285B typical hookup with two-speed fan motor Total Comfort application.
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.

Fig. 4—R8285C,G typical hookup in one-speed fan motor application.

Fig. 5—R8285D typical hookup with one-speed fan motor and pilot duty contacts for auxiliary load. R8285F has power duty contacts for auxiliary load.

Fig. 6—R8285E typical hookup with two-speed fan and limit controller application.

POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

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.

TO AUXILIARY CIRCUIT. MAY BE USED AS A LOCKOUT CONTACT TO PREVENT AN ELECTRIC STRIP HEATER FROM OPERATING UNLESS THE FAN MOTOR IS OPERATING, OR AS CONDENSING UNIT SWITCHING MEANS.

POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

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

R8222A.K SPST, NORMALLY OPEN

R8222B SPDT

R8222C.M, DPST, NORMALLY OPEN

R8222D,N.V DPDT

R8222E,P SPST, NORMALLY CLOSED

R8222F,Q DPST, ONE NORMALLY OPEN AND ONE NORMALLY CLOSED

R8222G,R DPST, NORMALLY OPEN AND SPST NORMALLY OPEN

R8222H,S,W SPDT AND SPST NORMALLY CLOSED

R8222I,T SPDT AND SPST NORMALLY CLOSED

R8222J,T SPDT AND SPST NORMALLY CLOSED

R8222K, SPST, NORMALLY OPEN

R8222L SPST, NORMALLY OPEN

R8222M DPST, NORMALLY OPEN

R8222N DPST, NORMALLY CLOSED

R8222P SPST, NORMALLY OPEN

R8222Q SPST, NORMALLY OPEN

R8222R DPST, NORMALLY OPEN

R8222S DPST, NORMALLY CLOSED

R8222T SPST, NORMALLY OPEN

R8222U SPST, NORMALLY OPEN

R8222V SPST, NORMALLY OPEN

R8222W SPST, NORMALLY OPEN

R8222X SPST, NORMALLY OPEN

R8222Y SPST, NORMALLY OPEN

R8222Z DPST, NORMALLY CLOSED

LEADWIRE COLOR DESIGNATIONS
1 = BLACK
2 = BROWN
3 = RED
4 = VIOLET
5 = YELLOW
6 = RED/YELLOW

SHORTING BAR
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.