

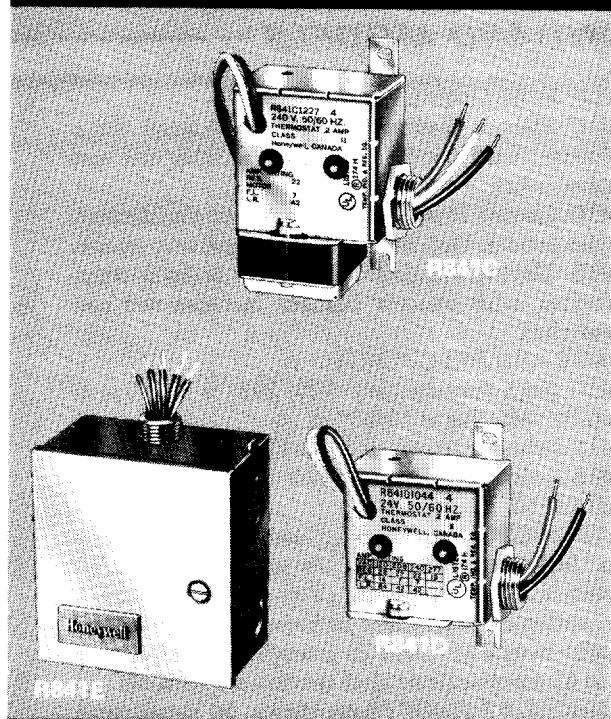
# Honeywell

THE R841 ELECTRIC HEATING RELAY IS USED WITH A 2-WIRE, 24V THERMOSTAT TO PROVIDE CONTROL OF ELECTRIC HEATING EQUIPMENT. IT IS A DIRECT-FOLLOWING RELAY WHICH OPERATES WITH EACH CYCLE OF THE THERMOSTAT (4 TO 6 CYCLES PER HOUR).

- R841C,D models are used to control one load.
- R841E is used either with one thermostat to control two loads simultaneously, or with two thermostats to control two independent loads.
- R841C and E models include an integral transformer; R841 D model must be powered from a remote 24V transformer.
- R841C and D models have a 1/2 inch male conduit bushing.
- The R841C,D and E models are for installation on a wireway or J-box.
- R841 E has a 1/2 inch male conduit bushing and includes an enclosure with a low voltage wiring compartment.
- Special R841E with 10 second minimum timing between stages is available.
- Each relay switches up to a 5,000 watt load.
- Spst MICRO SWITCH snap switches are actuated by ambient-compensated bimetal strips.
- Leadwires are provided for both line voltage and low voltage connections.
- Small size and silent operation allow installation in living area, utility room, or basement.
- May be mounted in any convenient position.

R.E.  
REV. 10-79 (.11)

## ELECTRIC HEATING RELAY



## R841C-E

Form Number

60-2004-1

# SPECIFICATIONS

## IMPORTANT

THE SPECIFICATIONS GIVEN IN THIS PUBLICATION DO NOT INCLUDE NORMAL MANUFACTURING TOLERANCES. THEREFORE, THIS UNIT MAY NOT MATCH THE LISTED SPECIFICATIONS EXACTLY. 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 to provide ease of stocking, ease of handling, and maximum replacement value. TRADELINE model specifications are the same as those of standard models except as noted below.

### TRADELINE MODELS AVAILABLE:

R841C, D, and E Electric Heating Relays.

### VOLTAGE AND FREQUENCY:

R841C-240 Vac, 60 Hz.

R841D-24 Vac, 60 Hz.

R841E-120, 208, 240, 277 Vac; 50/60 Hz.

ADDITIONAL FEATURES: TRADELINE pack with cross reference label and special instruction sheet.

## STANDARD MODELS

MODELS: R841 Electric Heating Relay.

R841 C Electric Heating Relay -with integral transformer, with conduit bushing; includes one spst snap switch.

R841 D Electric Heating Relay -without transformer, with conduit bushing; includes one spst snap switch.

R841 E Electric Heating Relay-with integral transformer, with conduit bushing; includes two spst switches.

### VOLTAGE AND FREQUENCY:

R841C (with transformer)- 120, 208, or 277 Vac at 60 Hz; 240 Vac at 50/60 Hz.

R841 D (without transformer)-24 Vac, 60 Hz.

R841E (with transformer)-120, 208, 240, or 277 Vac at 50/60 Hz.

SWITCH: MICRO SWITCH snap switch, bimetal operated. Makes contact about 75 seconds (cold) after thermostat calls for heat. (Top switch on R841 E with optional specification makes at about 55 seconds, bottom switch at about 75 seconds. ) Breaks contact about 65 seconds (hot) after thermostat shuts off,

ELECTRICAL RATINGS (A per switch, 60 Hz current):

	120 Vac	208/240/277 Vac
Full Load	14	7
Locked Rotor	84	42

Noninductive Rating: 22 A at 120, 208 and 240 Vac; 19 A at 277 Vac.

### THERMOSTAT HEAT ANTICIPATOR CURRENT:

R841C,D-0.2 A.

R841 E -0.4 A (one thermostat controlling both loads); 0.2 A (one thermostat controlling each load).

AMBIENT TEMPERATURE RANGE: Minus 20 F to plus 150 F [minus 29 C to 66 C].

UNDERWRITERS LABORATORIES INC. LISTED (R841C,D and E): File No. E4436, Guide XAPX.

CANADIAN STANDARDS ASSOCIATION CERTIFIED:

R841C,D-File No. LR1620 and LR1322.

R841E-File No. LR1620.

(continued on page 3)

# ORDERING INFORMATION

WHEN PURCHASING REPLACEMENT AND MODERNIZATION PRODUCTS FROM YOUR TRADELINE WHOLESALER OR YOUR DISTRIBUTOR, REFER TO THE TRADELINE CATALOG OR PRICE SHEETS FOR COMPLETE ORDERING NUMBER, OR SPECIFY-

1. Order number; specify TRADE LINE, if desired.
2. Voltage and frequency.
3. Optional specification, if desired.

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 HONEYWELL Residential DIVISION SALES OFFICE (CHECK WHITE PAGES OF PHONE DIRECTORY).

2. RESIDENTIAL DIVISION CUSTOMER SERVICE  
HONEYWELL INC., 1885 DOUGLAS DRIVE NORTH  
MINNEAPOLIS, MINNESOTA 55422 (612) 542-7500

(IN CANADA-HONEYWELL CONTROLS LIMITED, 740 ELLESMERE ROAD, SCARBOROUGH, ONTARIO M1P 2V9)  
INTERNATIONAL SALES AND SERVICE OFFICES IN ALL PRINCIPAL CITIES OF THE WORLD.

LEADWIRE LENGTH (NOMINAL):

**R841C,D-**

- Line voltage-18 in. [457.2 mm].
- Low voltage-7-1/2 in. [190.5 mm].

**R841E-**

- Line voltage-8 in. [203.2 mm].
- Low voltage-4 in. [101.6 mm].

CASE FINISH: Zinc bichromate.

CONDUIT BUSHING: R841C,D,E have a 1/2 in. [12.7 mm] male conduit bushing; R841 E also has three

7/8 in. [22.2 mm] knockouts in back and sides of case for 1/2 in. [12.7 mm] conduit.  
 DIMENSIONS: See Figs. 1 and 2.

OPTIONAL SPECIFICATIONS:

1. R841C with special leadwires (277 Vat, 60 Hz only).
2. R841E with 10 second minimum timing between stages on both make and break operation. Meets EEI-NE-MA requirement.

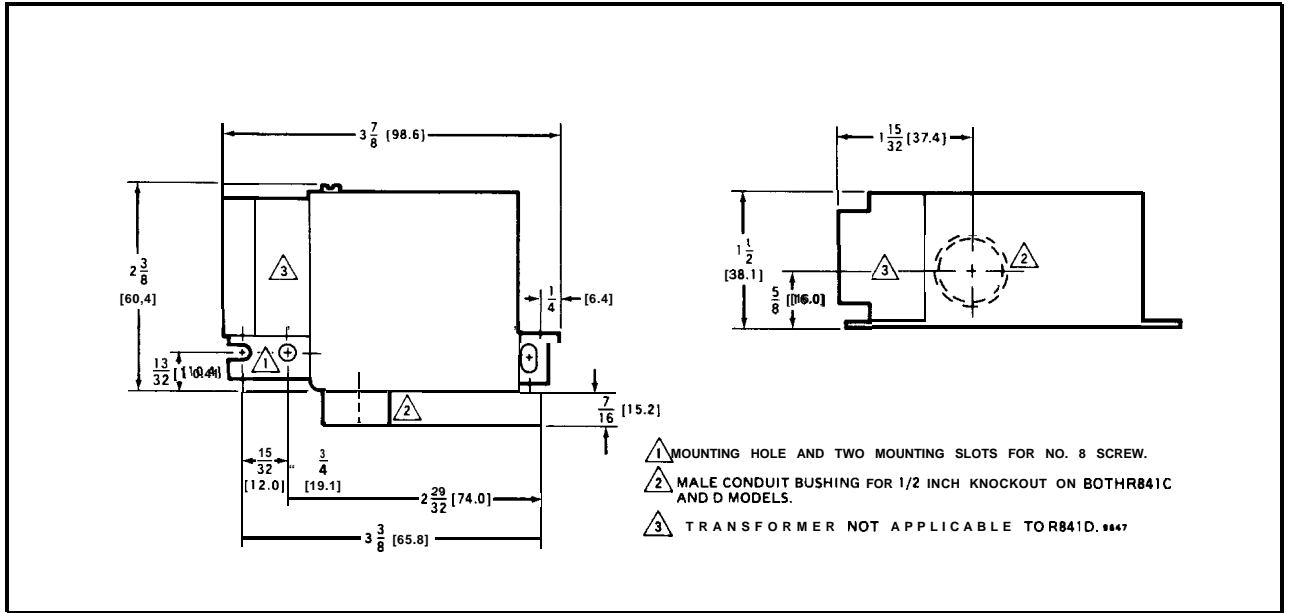


FIG. 1-DIMENSIONS OF R841C,D IN in. [mm IN BRACKETS].

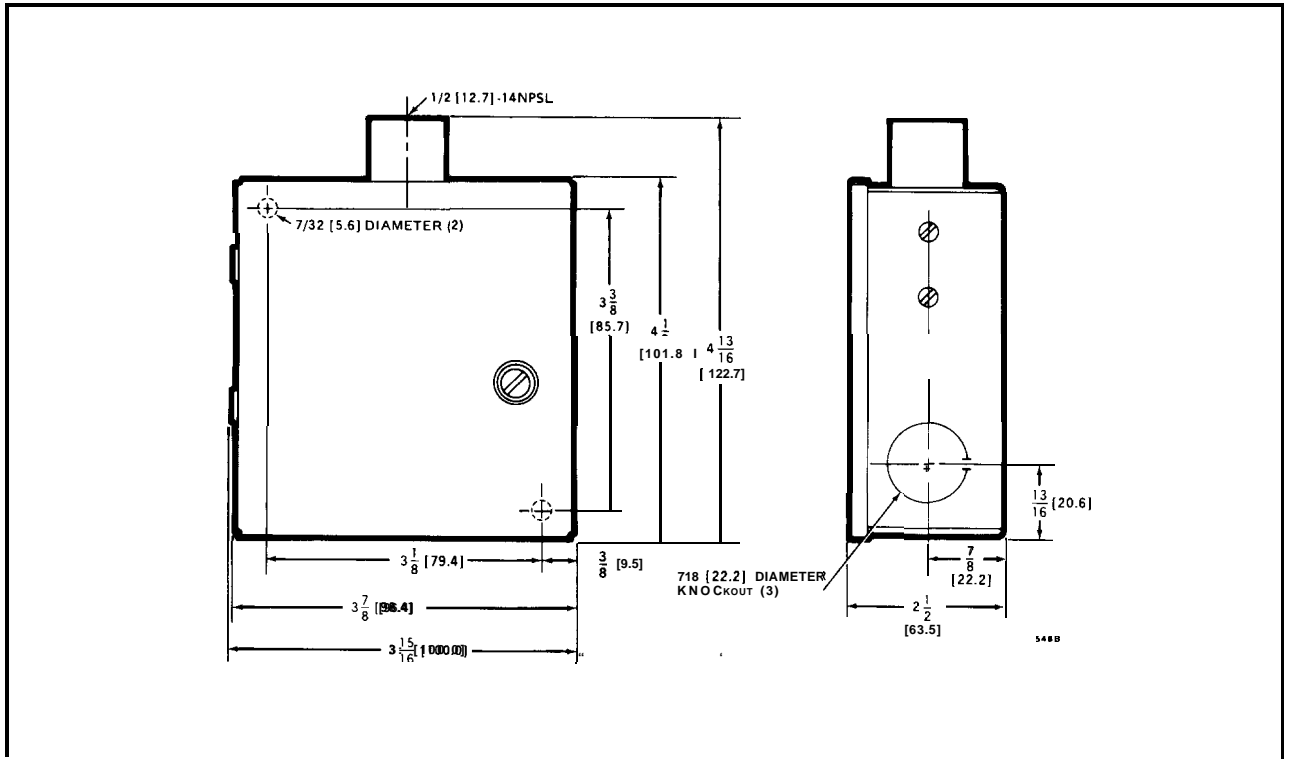


FIG. 2-DIMENSIONS OF R841E IN in. [mm IN BRACKETS].

# INSTALLATION AND HOOKUP

## 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 the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.

## CAUTION

Disconnect power supply before wiring to prevent electrical shock or equipment damage.

All wiring must comply with applicable codes and ordinances. Be sure the power supply voltage agrees with the rating on the relay label.

Fig. 3 shows a typical installation within a compartment enclosure on the end of a baseboard heater. The back of the compartment enclosure should be equipped with embossing to clear mounting screws.

R841C,D,E also may be mounted on a wireway (Fig. 4) or junction box.

1. Fasten relay securely to mounting surface using the 2 mounting holes in the **backplate** or the conduit bushing.
2. Disconnect the power supply.

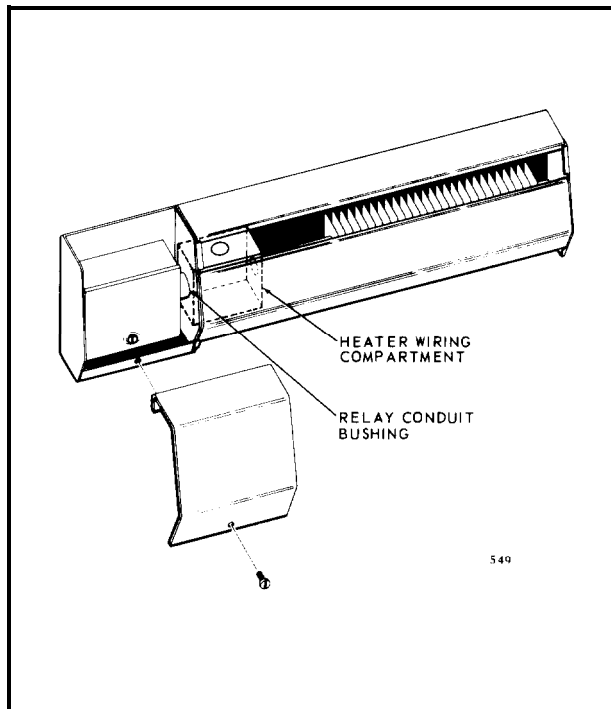


FIG. 3—TYPICAL INSTALLATION ON BASEBOARD HEATER.

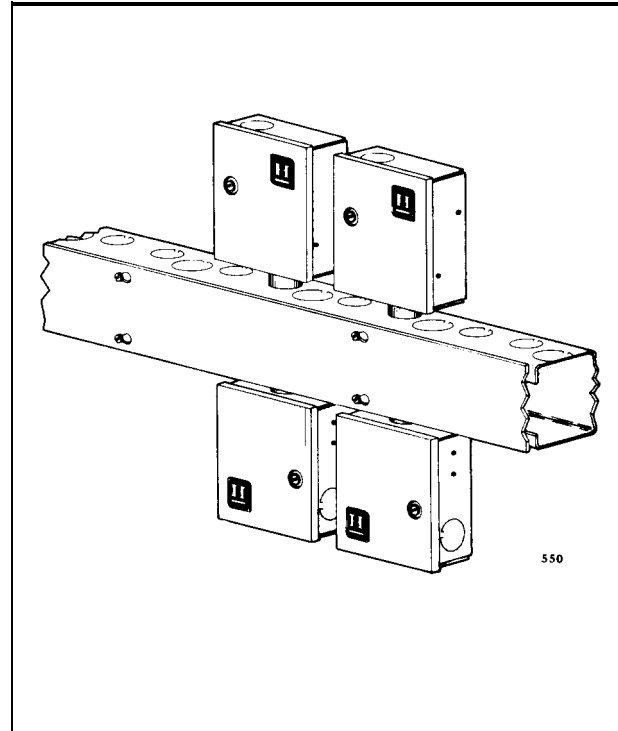


FIG. 4—FOUR RELAYS MOUNTED ON WIREWAY.

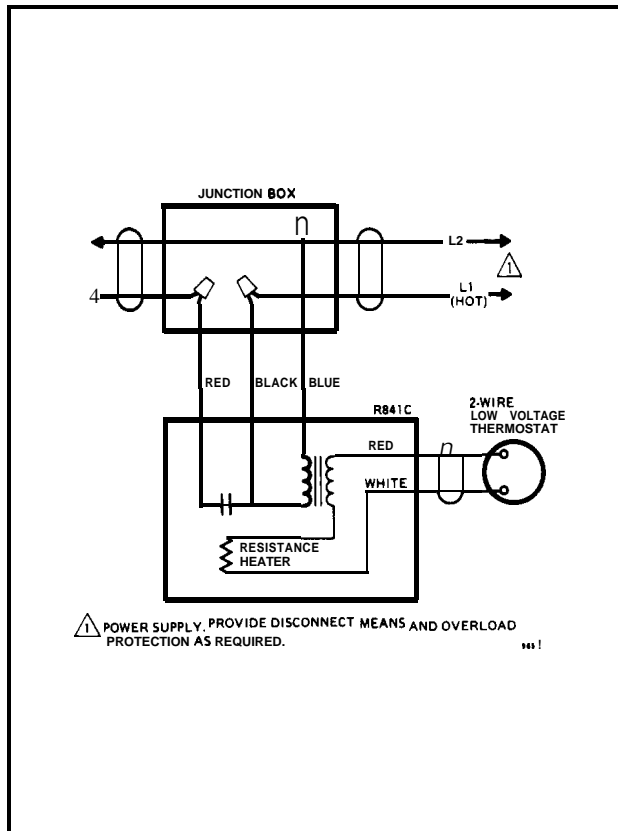
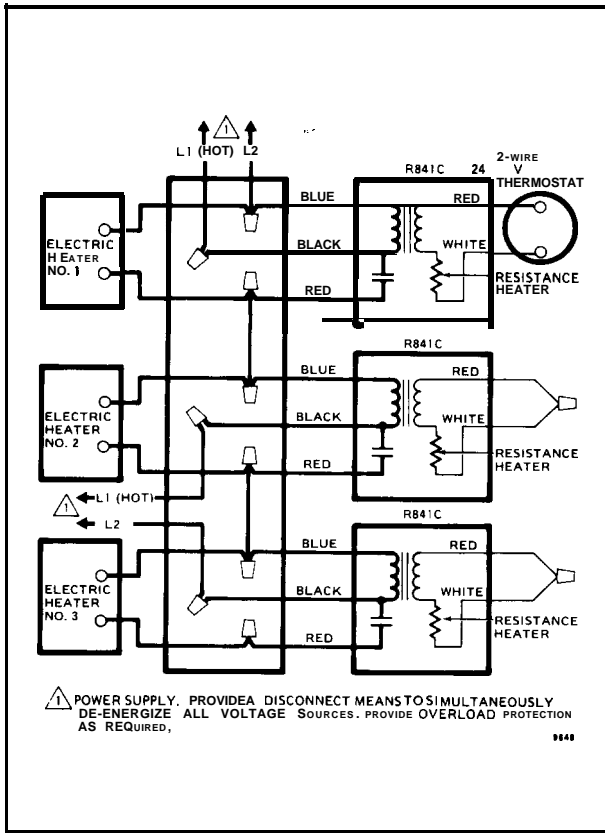
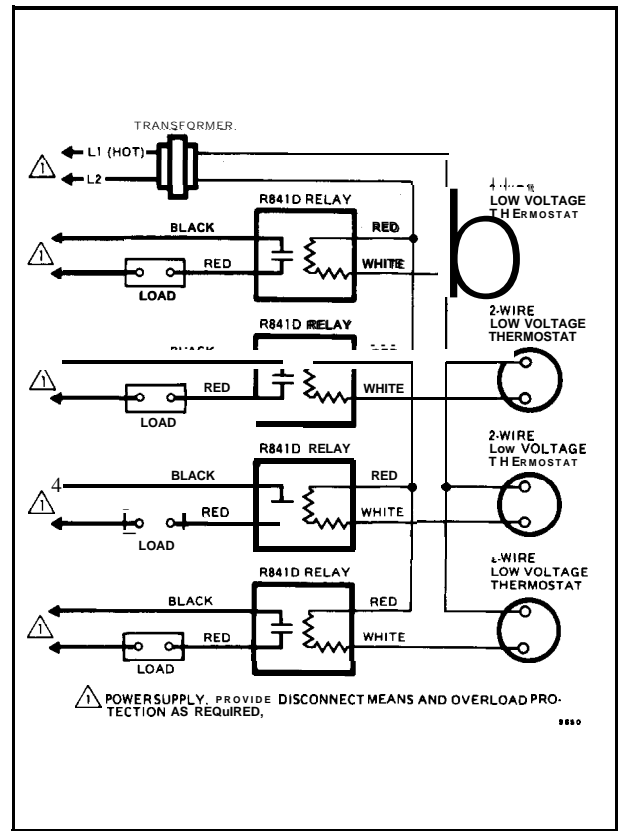


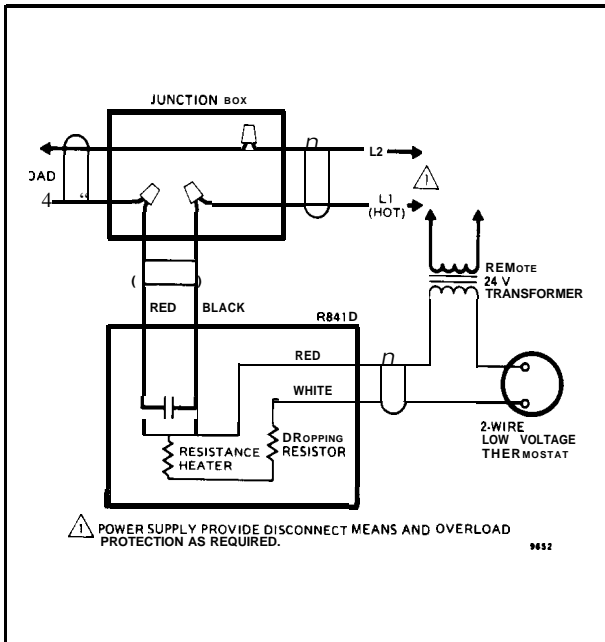
FIG. 5—R841C INTERNAL SCHEMATIC AND CONNECTION DIAGRAM FOR ONE RELAY.



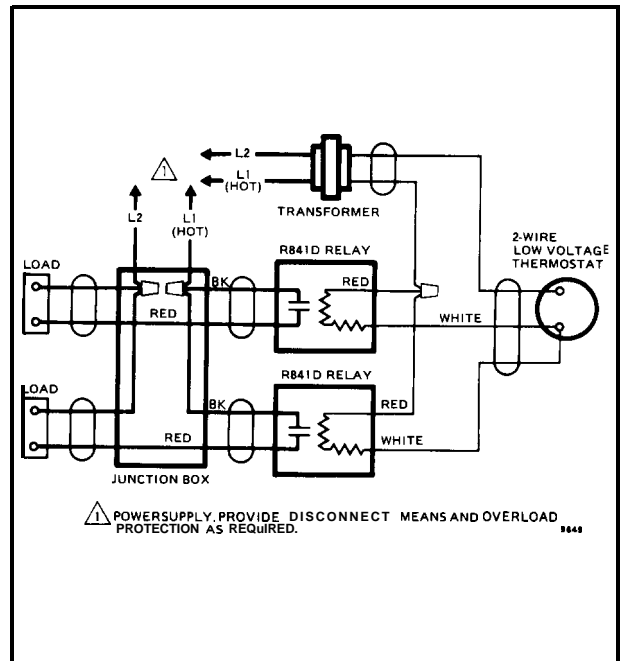
**FIG. 6—TWO OR MORE R841C RELAYS CONNECTED TO ONE THERMOSTAT SO THEY OPERATE IN SEQUENCE ABOUT ONE MINUTE APART. THIS REDUCES THE INITIAL LINE LOAD ON LARGE KILOWATT INSTALLATIONS. SET THE THERMOSTAT HEAT ANTICIPATOR AT 0.2A.**



**FIG. 8—CONNECTIONS FOR FOUR R841D RELAYS AND THERMOSTATS USED WITH ONE TRANSFORMER. SET EACH THERMOSTAT HEAT ANTICIPATOR AT 0.2 A.**



**FIG. 7—R841D INTERNAL SCHEMATIC AND CONNECTION DIAGRAM FOR ONE RELAY.**



**FIG. 9—CONNECTIONS FOR TWO R841D RELAYS USED WITH ONE TRANSFORMER AND THERMOSTAT. SET THERMOSTAT HEAT ANTICIPATOR AT 0.4 A.**

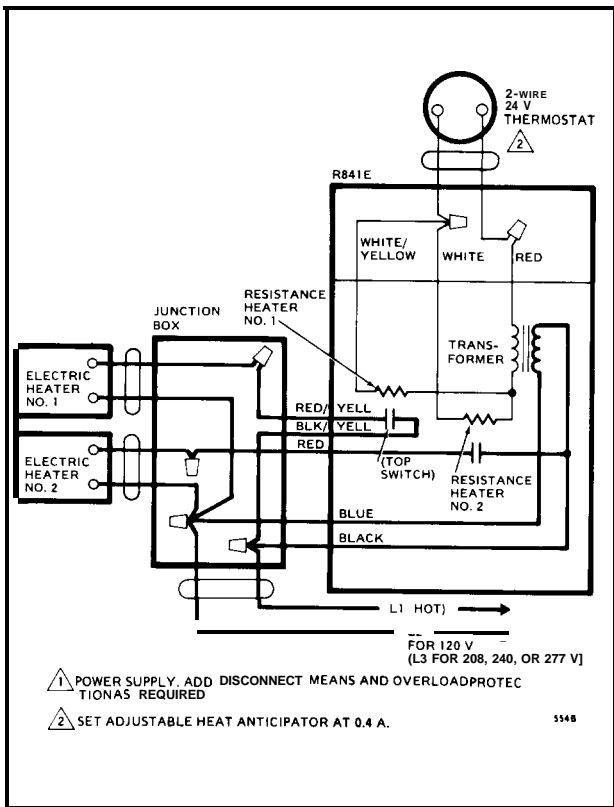


FIG. 10-TYPICAL WIRING HOOKUP FOR R841E WITH ONE THERMOSTAT OPERATING TWO LOADS SIMULTANEOUSLY.

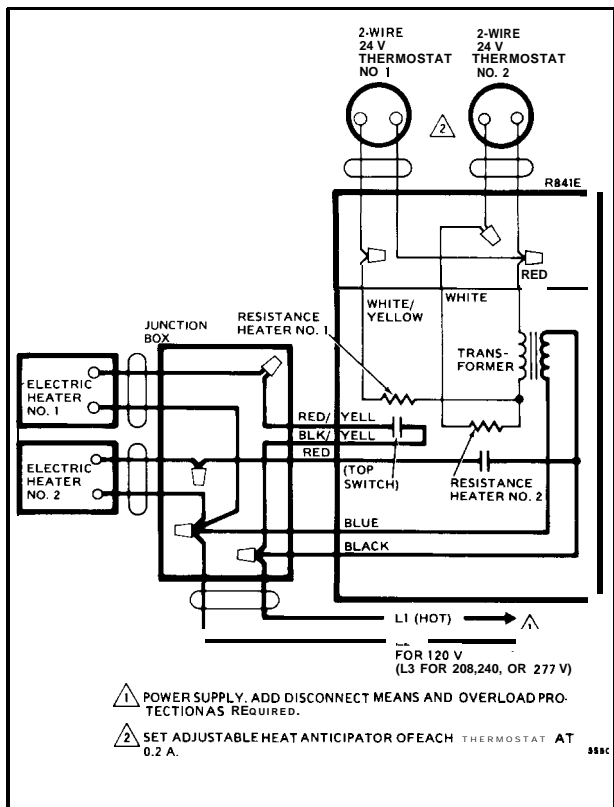


FIG. 11-TYPICAL WIRING HOOKUP FOR R841E WITH TWO THERMOSTATS, EACH WITH ITS OWN LOAD.

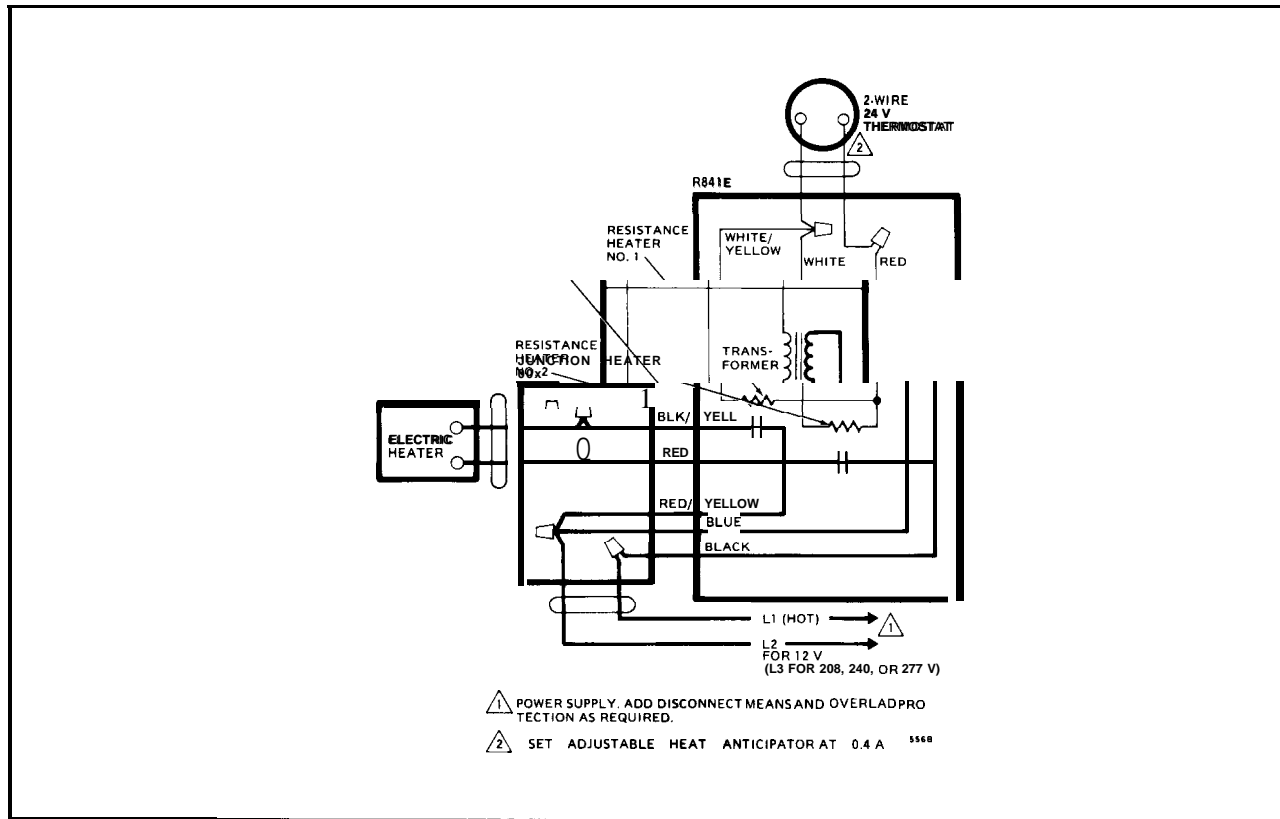


FIG. 12-TYPICAL WIRING HOOKUP FOR R841E WITH ONE THERMOSTAT CONNECTED TO ONE LOAD SO THAT BOTH SIDES OF THE SINGLE PHASE LINE ARE SWITCHED.

## OPERATION

The cycling pattern of the R841 is determined by the thermostat(s). On a call for heat, the thermostat(s) activates the low voltage resistance heater(s) in the **R841**. The heater(s) drives the **bimetal** strip(s) to actuate the **spst**, MICRO SWITCH snap-acting switch or switches. The **bimetal** strip is ambient temperature compensated within the specified ambient range. At rated voltage and

frequency, the R841 switch contacts make **approximately** 75 seconds (from cold start) after the thermostat calls for heat. (The top switch on the special R841 E with optional specification is adjusted to approximately 55 seconds; the bottom switch to approximately 75 seconds. This allows, at the very minimum, 10 seconds between stages in both make and break sequence.)

## CHECKOUT

After mounting and wiring have been completed, turn on the power supply. Set the thermostat above room **tem-**perature until the electric heating equipment starts. Permit the system to operate long enough to prove the

heating equipment functions properly. Return the **ther-**mostat to the desired room temperature before leaving the installation.

Dear Customer,

We welcome your comments and suggestions for improving this **publi-**cation. Your assistance is greatly appreciated and will **enable** us to provide better **technical** information for ye<sup>r</sup>.

Please send your **comments** and suggestions to:

**Honeywell** Inc.  
Honeywell Plaza  
Minneapolis, Minnesota 55408  
ATTN: Publications Supervisor MN 12-3247

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PRINTED IN U.S.A.