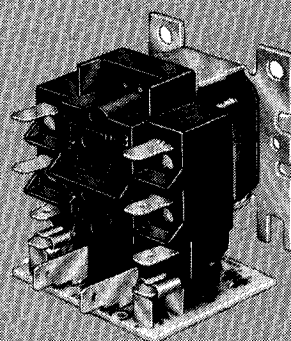


# Honeywell

## TIME DELAY RELAY

THE ST82 TIME DELAY RELAY IS USED IN COMPRESSOR-RUN AIR CONDITIONING AND HEAT PUMP SYSTEMS. THE ST82 DELAYS THE INDOOR BLOWER SHUT-OFF AFTER THE COMPRESSOR HAS SHUT OFF.

- ST82 Time Delay Relay combines an electronic timer and an R8222 or R8228 Relay with double 1/4 in. quick-connect coil terminals.
- Contacts rated for Powerpile (millivoltage), pilot duty and power pole applications, depending on model used.
- Used in low voltage (24 Vac) control circuits.
- Delay timings available from 30 seconds to 10 minutes (80 seconds standard).
- Laminated magnet construction for high efficiency.
- Molded terminal numbers and circuit diagram on top of relay and letter-coded terminals on time delay board provide easy identification for wiring and system checkout.
- Relay constructed for high reliability.
- Quick-connect terminals for easy wiring.
- ST82A model available with R8228A Relay for use in pool and spa applications; allows circulator pump to continue running after burner has shut off.



## ST82

# 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. FOR EXACT ENGINEERING SPECIFICATIONS, CONTACT YOUR HONEYWELL SALES REPRESENTATIVE.

### 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:

ST82B,D Time Delay Relays—low voltage electronic time delay board combined with an R8222 Relay with double 1/4 in. quick-connect coil terminals.

#### FEATURES:

- Contacts rated for power pole applications.
- TRADELINE pack with special instruction sheet.

- Spdt or dpdt switching:

| Model Number | Relay  | Switching Configuration | Terminals |
|--------------|--------|-------------------------|-----------|
| ST82B        | R8222B | Spdt                    |           |
| ST82D        | R8222D | Dpdt                    |           |

### STANDARD MODELS

#### MODELS:

ST82 Time Delay Relays: low voltage electronic time delay board combined with an R8222 or R8228 Relay with double 1/4 in. quick-connect coil terminals.

See Table I below for specific models and switching configurations.

TABLE I—ST82 MODELS.

| MODEL NUMBER | RELAY  | SWITCHING CONFIGURATION                      | TERMINALS |
|--------------|--------|--|-----------|
| ST82A        | R8228A | Spst, N.O.                                   |           |
| ST82B        | R8222B | Spdt   |           |
| ST82M        | R8222M | Dpst, N.O.                                   |           |
| ST82U        | R8222U | Dpst, N.O.<br>(one power and one pilot duty) |           |

# ORDERING INFORMATION

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

1. Order number, specify TRADELINE if desired.
2. Delay timing.

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 AND BUILDING CONTROLS DIVISION SALES OFFICE (CHECK WHITE PAGES OF PHONE DIRECTORY).
2. RESIDENTIAL AND BUILDING CONTROLS DIVISION CUSTOMER SATISFACTION  
HONEYWELL INC., 1885 DOUGLAS DRIVE NORTH  
MINNEAPOLIS, MINNESOTA 55422-4386 (612) 542-7500

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

INPUT VOLTAGE—24 Vac nominal.  
 CURRENT DRAW—20 mA max. relay deenergized;  
 0.55 A max. relay energized.  
 TOTAL POWER CONSUMPTION (relay with time delay  
 board)—  
 relay deenergized—0.5 VA;  
 relay energized—11.0 VA.

TERMINALS: 1/4 in. quick-connects.  
 SWITCHING CONFIGURATIONS (Specify when order-  
 ing.): See Table I on page 2.

R8222 CONTACT RATINGS: Power Pole (Amperes  
 per pole)—

|                             | 120 Vac | 208/240/277 Vac | 480 Vac |
|-----------------------------|---------|-----------------|---------|
| Full Load                   | 12      | 6               | 3       |
| Locked Rotor                | 60      | 36              | 18      |
| Resistive                   | 15      | 15              | 10      |
| U.L. Approved<br>Horsepower | 3/4 hp  | 3/4 hp          | 3/4 hp  |

Pilot Duty Poles—

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 A at 277 Vac.

Powerpile (millivoltage)—

The normally open pilot duty contacts are rated for  
 Powerpile (millivoltage) applications—  
 0.25A at 0.25 to 12 Vdc.

R8228 CONTACT RATINGS (Amperes):

|                        | 120     | 208/<br>240 Vac | 277 Vac | 480 Vac |
|------------------------|---------|-----------------|---------|---------|
| Full load              | 16   18 | 18              | 12      | 5       |
| Locked Rotor           | 96   72 | 72              | 72      | 30      |
| Resistive <sup>a</sup> | 18      | 25              | 25      | 15      |
| Horsepower             | 1 hp    | 2 hp            | 2 hp    | 1.5 hp  |

<sup>a</sup>Also rated 10 A resistive at 600 V.

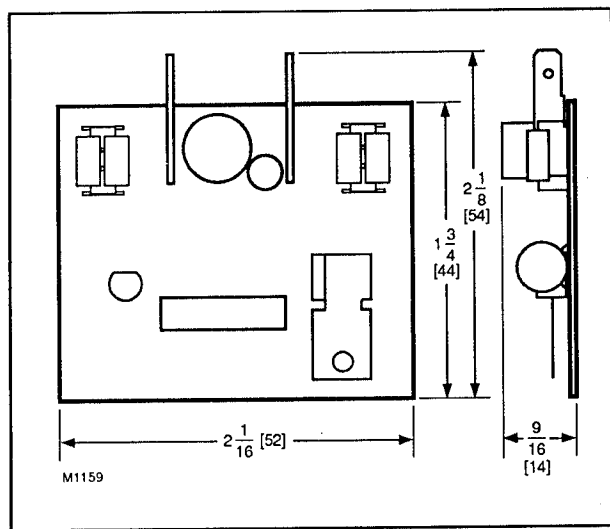


FIG. 1—APPROXIMATE DIMENSIONS OF TIME DELAY BOARD IN in. [mm]. FOR APPLICATIONS REQUIRING EXACT ENGINEERING DIMENSIONS, CONTACT YOUR HONEYWELL SALES REPRESENTATIVE.

COIL RATINGS:

|                  | 24 Vac               |
|------------------|----------------------|
| Inrush VA (max.) | 20                   |
| Sealed VA (max.) | 9 to 11 <sup>a</sup> |

<sup>a</sup>Rating varies depending on relay model used.

Minimum voltage required for pickup: 75 percent of nominal coil voltage.

Coil temperature must not exceed Underwriters Laboratories Inc. Class B rating (248° F [120° C]).

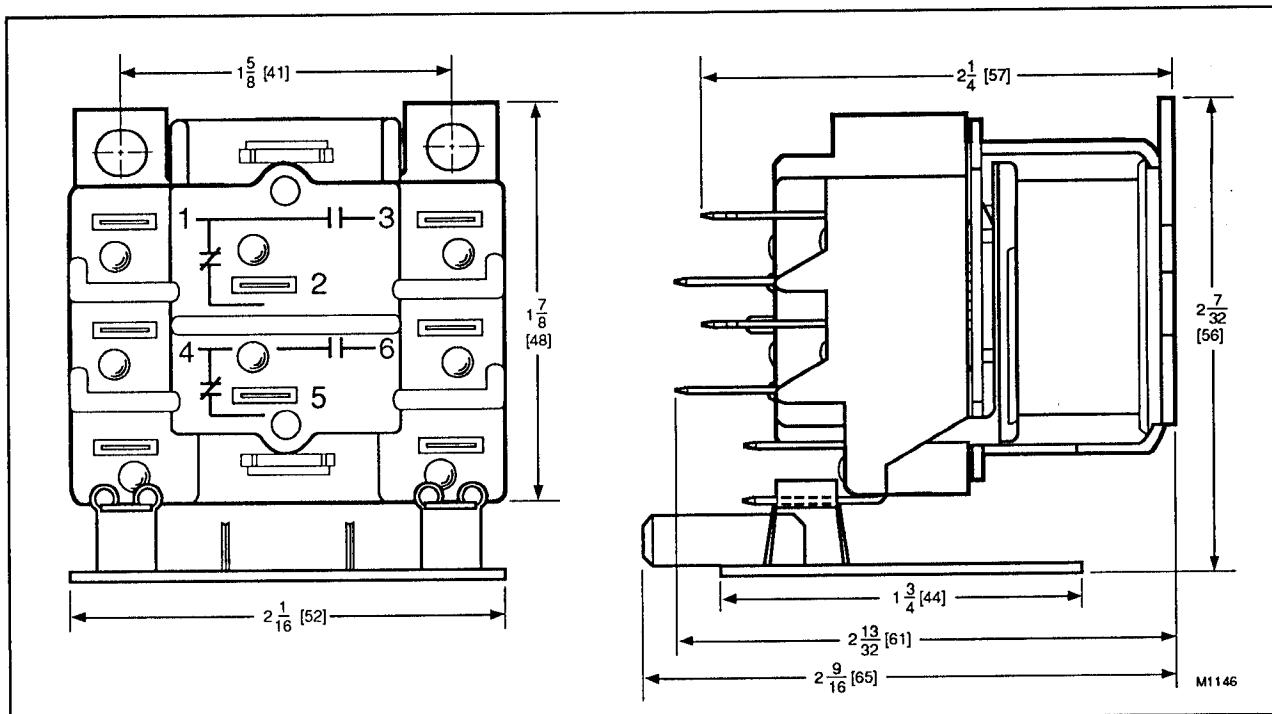


FIG. 2—APPROXIMATE DIMENSIONS OF ST82 IN in. [mm]. FOR APPLICATIONS REQUIRING EXACT ENGINEERING DIMENSIONS, CONTACT YOUR HONEYWELL SALES REPRESENTATIVE.

**MOUNTING:** Use two screws (up to No. 10 size) through holes in the metal base. Base is designed for easy replacement of competitive relays.

**DELAY TIMING:** 30 seconds to 10 minutes, depending on model (contact your Honeywell Sales Representative).

**AMBIENT TEMPERATURE RANGE:** -20° F to 150° F [-29° C to 65° C].

**MAX. HUMIDITY RATING:** 95% RH.

**DIMENSIONS:** See Figs. 1 and 2.

**UNDERWRITERS LABORATORIES INC. LISTED:** File No. MP466, Guide No. MBPRZ2; **CANADIAN STANDARDS ASSOCIATION CERTIFIED:** File No. LR69073-3.

## INSTALLATION

### WHEN INSTALLING THIS PRODUCT...

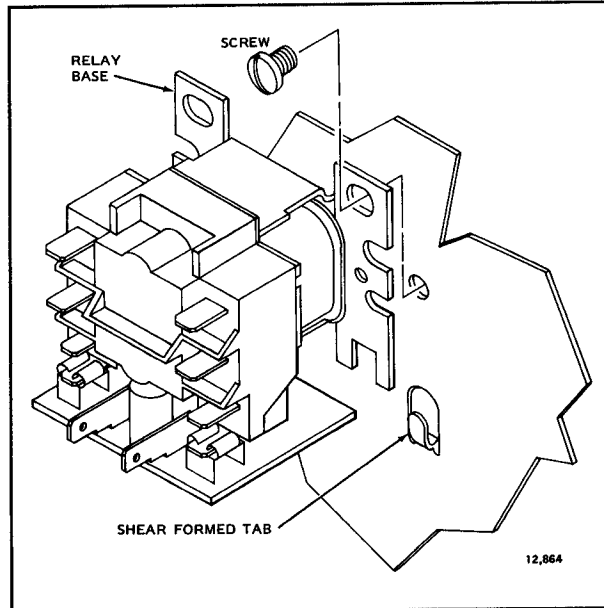
1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.

### CAUTION

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

### IMPORTANT

Disconnect the time delay board from the relay before performing UL 500 V, 60 Hz one minute equipment dielectric test.



**Fig. 3—MOUNTING RELAY ON PANEL WITH SHEAR-FORMED TAB AND ONE SCREW.**

### MOUNTING

Mount the relay on a flat, solid surface close to the equipment being controlled. The relay may be panel- or wall-mounted with the base vertical or horizontal. *If base is horizontal, it must be mounted with the terminals up.* Secure with the two screws through holes or slots in the mounting base or as shown in Fig. 3.

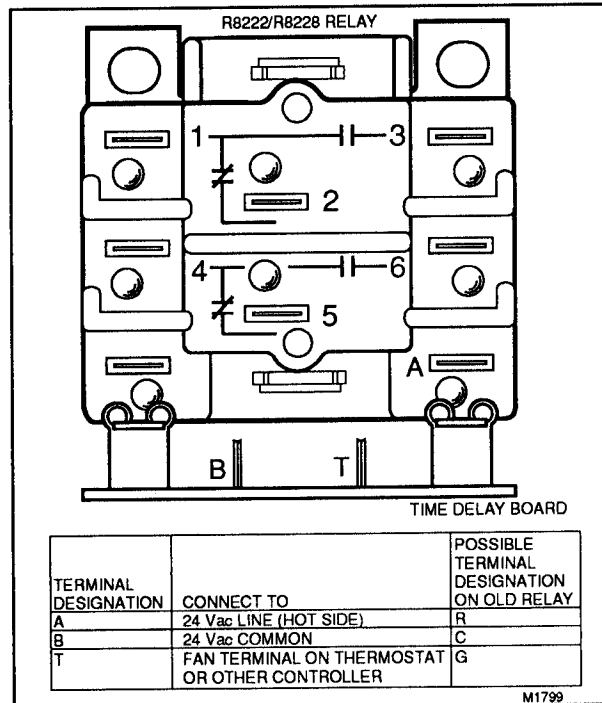
### WIRING

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

All wiring must comply with local codes and ordinances. Crimp female quick-connects to the system wires and attach to the male quick-connect terminals of the ST82. The time delay board has letter-coded terminals, and the relay has molded terminal numbers and circuit diagram on top for easy identification when wiring.

Make sure system wires are connected to the A, B and T terminals on the time delay board for proper system operation. The time delay board requires constant 24 Vac power across the A (hot) and B (ground) terminals. The T terminal connects to the fan terminal on the thermostat or other controller. Refer to Figs. 4-6 for terminal designations and wiring connections.

Do not exceed contact and coil ratings when wiring into system.



**FIG. 4—CIRCUIT AND TERMINAL DESIGNATIONS.**

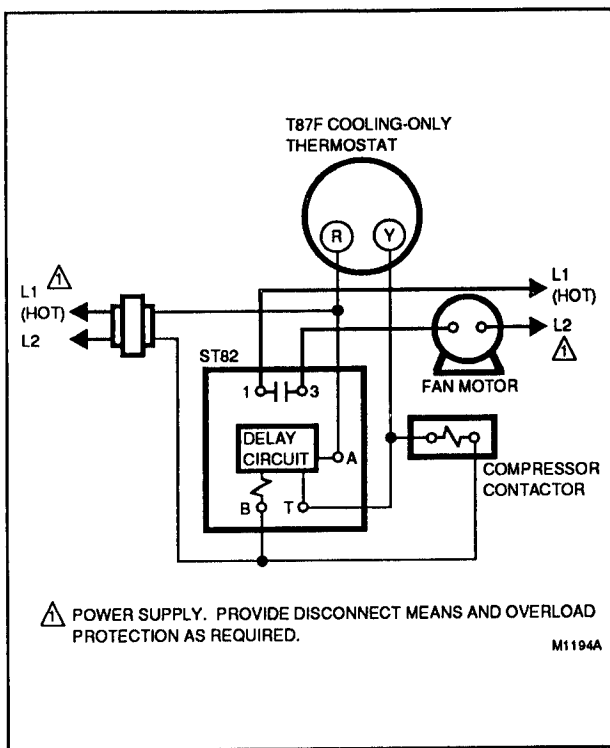


FIG. 5—ST82 IN A COOLING-ONLY APPLICATION.

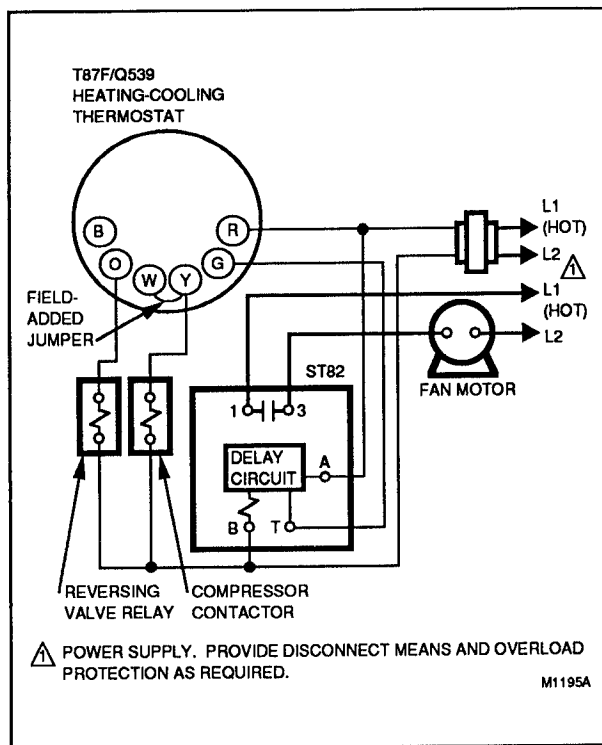


FIG. 6—ST82 IN A HEAT PUMP APPLICATION.

## OPERATION AND CHECKOUT

### OPERATION

When the thermostat calls for indoor blower operation, an electronic switch in the electronic board pulls in and powers the relay coil. When the call ends, the electronic switch in the electronic board holds in the relay coil for the specified delay timing (varies depending on model used). This increases the efficiency of the equipment and saves energy.

NOTE: When power is initially applied during installation or after power interruption, the relay will pull in for a maximum of 0.5 seconds and then drop out.

### CHECKOUT

When power is initially applied, check to make sure the relay pulls in for not more than 0.5 seconds and drops out. Then operate the relay and controlled equipment to make sure that the relay pulls in when the T terminal is energized with 24 Vac and that controlled equipment operates as intended. When the T terminal is deenergized (24 Vac removed), the indoor air blower should continue to operate until the delay period ends.