

### APPLICATION

The ST82 Fan Manager is for use in compressor-run air conditioning and heat pump systems to delay the blower shut-off after the compressor has shut off. This delay allows the residual cooled air to be blown into the controlled space, increasing the efficiency of the system in cooling. Depending on electrical hookup in a heat pump system, delay of blower shut-off could also occur in heating.

ST82B includes R8222B Relay with spdt switching; ST82D includes R8222D Relay with dpdt switching. ST82 has 80 (±10) second delay timing. Ambient temperature range is -20° F to 150° F [-29° C to 65° C]. Underwriters Laboratories Inc. listed; Canadian Standards Association certified.

#### IMPORTANT

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

### ELECTRICAL RATINGS:

#### 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 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—0.25 A at 0.25 to 12 Vdc.

#### COIL RATINGS:

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

	24 Vac
Inrush VA (max.)	20.0
Sealed VA (max.)	9.5
Current Draw	0.4

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

Input Voltage—24 Vac nominal.

Current Draw—20 mA max. relay deenergized; 0.55 A max. relay energized.

Total Power Consumption—  
 relay deenergized—0.5 VA;  
 relay energized—11.0 VA.

### 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.

### LOCATION

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. 1.

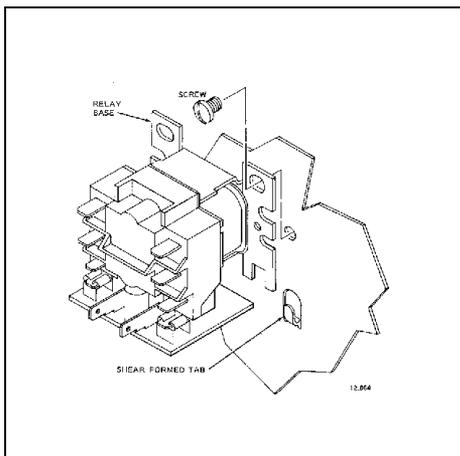


Fig. 1—Mounting relay on panel with shear-formed tab and one screw.

### 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 on the ST82. The time delay board has letter-coded terminals, and the relay has molded terminal numbers and circuit diagram on relay 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. 2-4 for terminal designations and wiring connections.

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

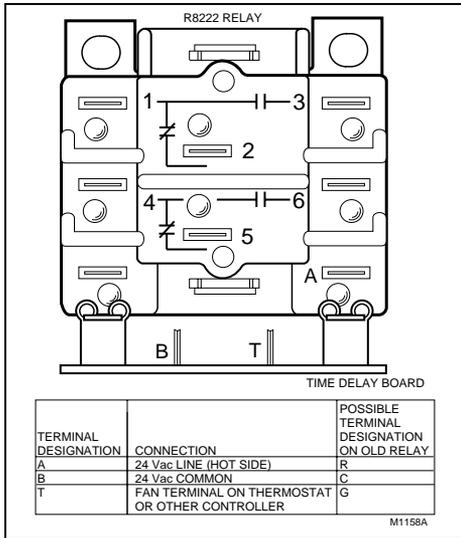


Fig. 2—ST82 circuit and terminal designations.

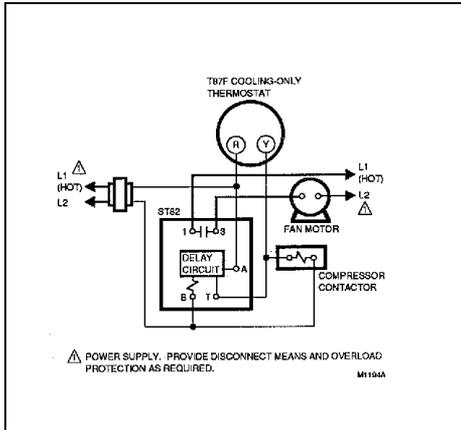


Fig. 3—ST82 in a cooling-only application.

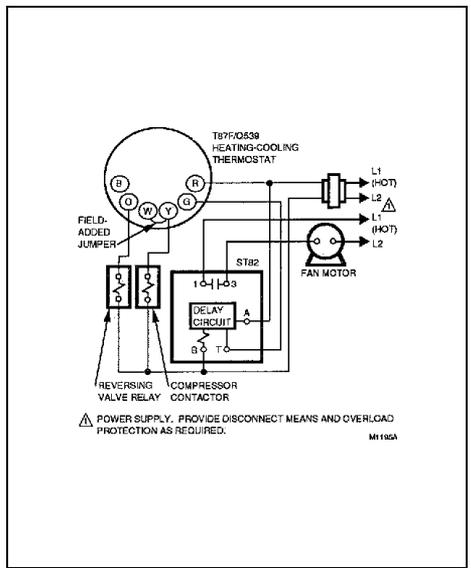


Fig. 4—ST82 in a heat pump application.

## OPERATION AND CHECKOUT

### OPERATION

When the thermostat calls for indoor blower operation, an electronic switch in the ST82 electronic board pulls in and powers the R8222 relay coil. When the call ends, the electronic switch in the ST82 electronic board holds in the R8222 relay coil for an additional 80 ( $\pm 10$ ) seconds. 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 (80  $\pm 10$  seconds) ends.