

Hoffman|Controls

Installation & Operating Instructions

870-10D

Fan Cycle Switch



General

CAUTION



Failure to read and understand the accompanying instructions and diagrams or failure to complete the “Checkout Procedure” prior to energizing the Control may result in permanent damage to the Control.

The 870-10D Controller requires an external 24V AC power source. The primary of the 24V AC transformer must be powered by the same phases that supply the motor.

HCC recommends use of the **Adjustable Sensor Simulator**, Part Number 510-0027-000 for installation and troubleshooting.

Pre-Installation Information/ Instruction

1. For use with Single Phase, direct drive, open frame drip proof permanent split capacitor, or shaded pole motors.
2. Line Voltage Range: Available from 115V AC, 208-230V AC.
3. Wiring must comply with Local and National Electrical Codes.
4. One Controller may control more than one motor.
 - a. Max. running amps under all conditions not to exceed 10 Amps.
 - b. Locked Rotor Amps (LRA) not to exceed 30 Amps for 1 second.
5. Do not mount the Controller in an airtight cabinet or compartment.

Installation

- Select the appropriate line voltage wiring diagram for either a single capacitor (figure 3) or dual capacitor (figure 4) configuration.
- Disconnect all factory wiring connecting the motor to the line.
- Install the Controller in a weatherproof control panel or use HCC’s **NEMA 3R Weatherproof Kit (Part Number 545-0202-007)**. **Note:** Controller must be protected from moisture and condensation.
- **Do not install the Controller in an airtight compartment, or near heat generating sources.**

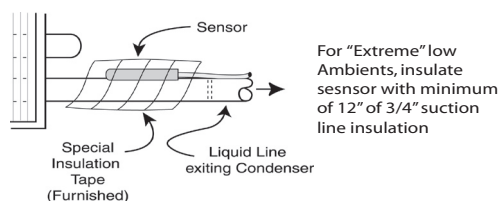
IMPORTANT

Refrigerant change is critical. Unit must provide 4°F to 6°F Liquid Line Subcooling when ambients are at 95°F. At 60°F ambient's Subcooling should be 22°F +/- . At 30°F ambients Subcooling should be 34°F +/- ..

Sensor Installation

Liquid Line Sensor

- Install Sensor(s) to the top of liquid line where the line exits the condenser coil (refer to Figure 2).
- Use the special tape provided to secure the Sensor to the liquid line. Stretch the tape slightly, as you wrap Sensor around the liquid line. Use all the tape, lapping the Sensor. Firm contact is required between the metal tab of the Sensor and the liquid line. When using one sensor, always use the S1 terminal.
- Connect the Sensor(s) to the Sensor input terminals.
- Additional insulation of the taped sensor and adjacent refrigerant line back to condenser header may be required in extremely cold ambients (+20° F) and below.

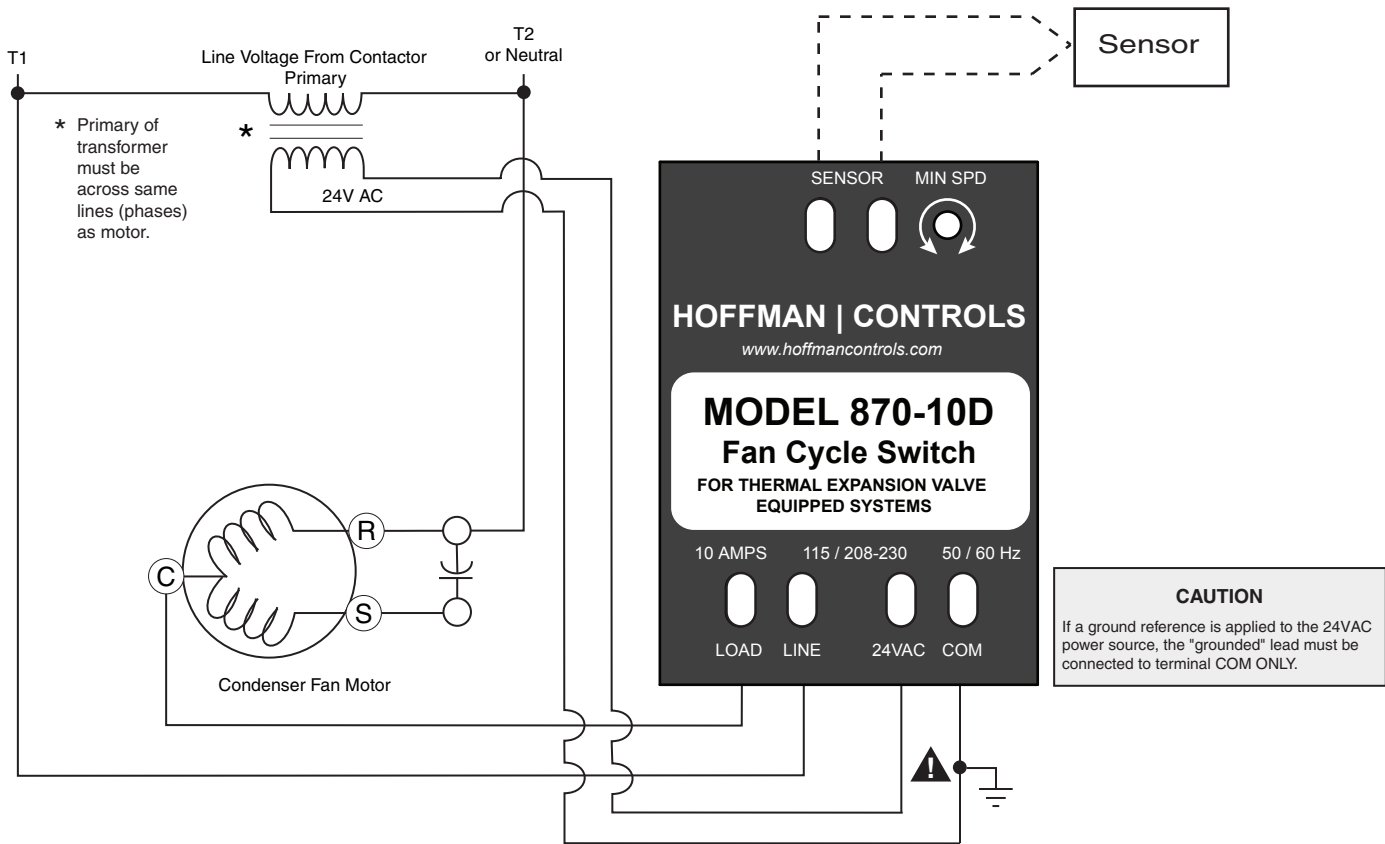


Sensor Diagram Figure 1

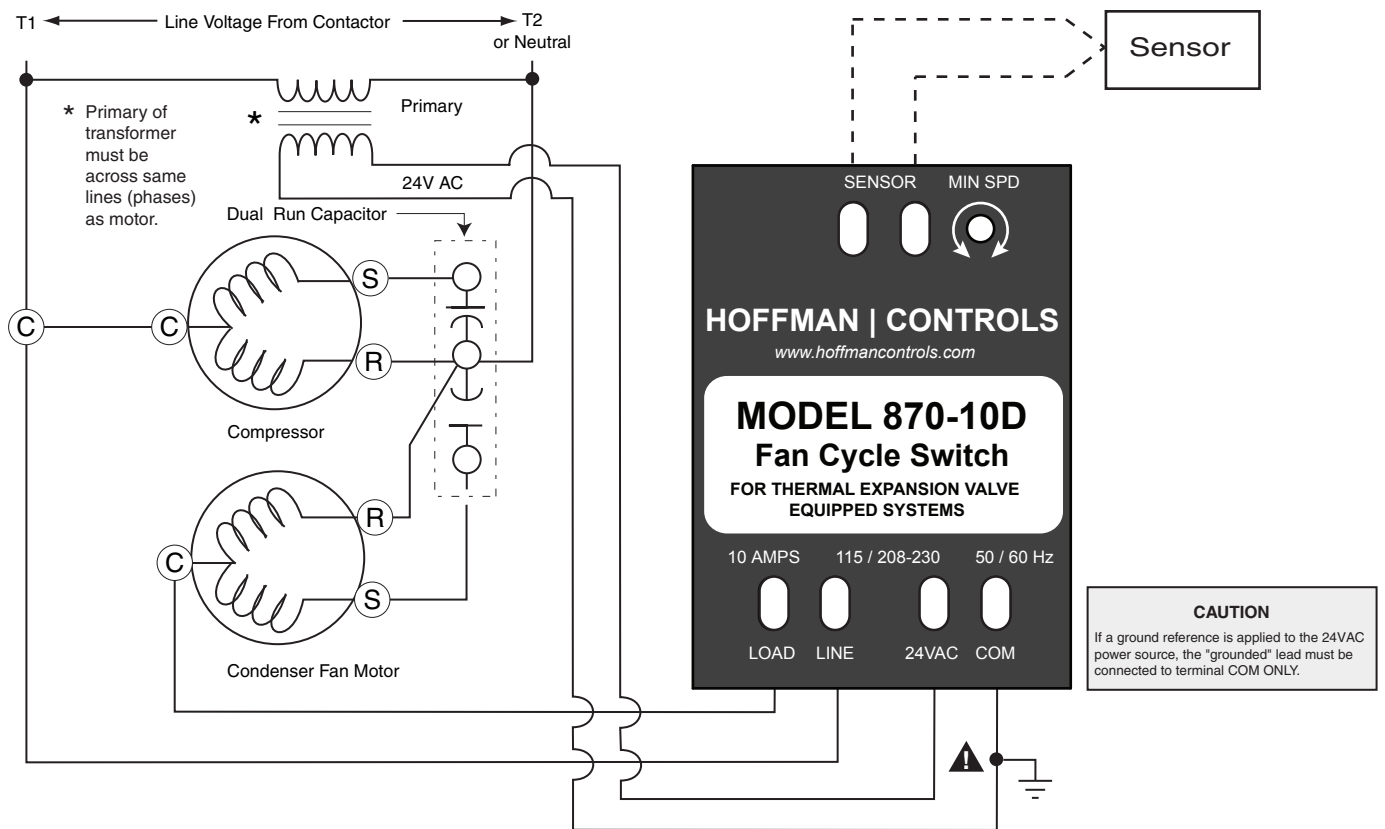
Checkout Procedure

Set thermostat for cooling demand and apply voltage to the unit. Condenser fan will start if ambient/liquid line is 3° above the low°F value for the span (60°F).

1. Monitor liquid line temperature (°F) and condenser motor voltage and current.
2. Verify that the motor is operating properly for temperature sensed. Depending on when the sensor temperature at “start up” is:
 - a. **Below Span Minimum,**
The motor(s) will not start.
 - b. **Above Span**
The motor(s) will start and remain at full speed when temperatures are above the high end of the span.



Wiring Diagram for the 870-10D
Figure 2



Wiring Diagram for the 870-10D
Figure 3

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