Hoffman|Controls

Installation & Operating Instructions

870-10D(DC)

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 870-10DDC 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.

Pre-Installation Information/ Instruction

1. For use with Single Phase, direct drive, open frame permanent split capacitor, or shaded pole motors. Motors are to be selected or designed for variable speed drive applications.
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 2) or dual capacitor (figure 3) 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.**

WARNING

Disconnect power from the unit and electrically disable the compressor prior to installation.

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 +/-..

Checkout Procedure

With power disconnected and the Controller wired:

1. Measure the ohms across the MOTOR terminals "#1" and "#2" using an ohm meter.
2. If you read 1 ohm or less (115V AC operating voltage), or 5 ohms or less (208V AC or greater operating voltage), the Controller is improperly wired.

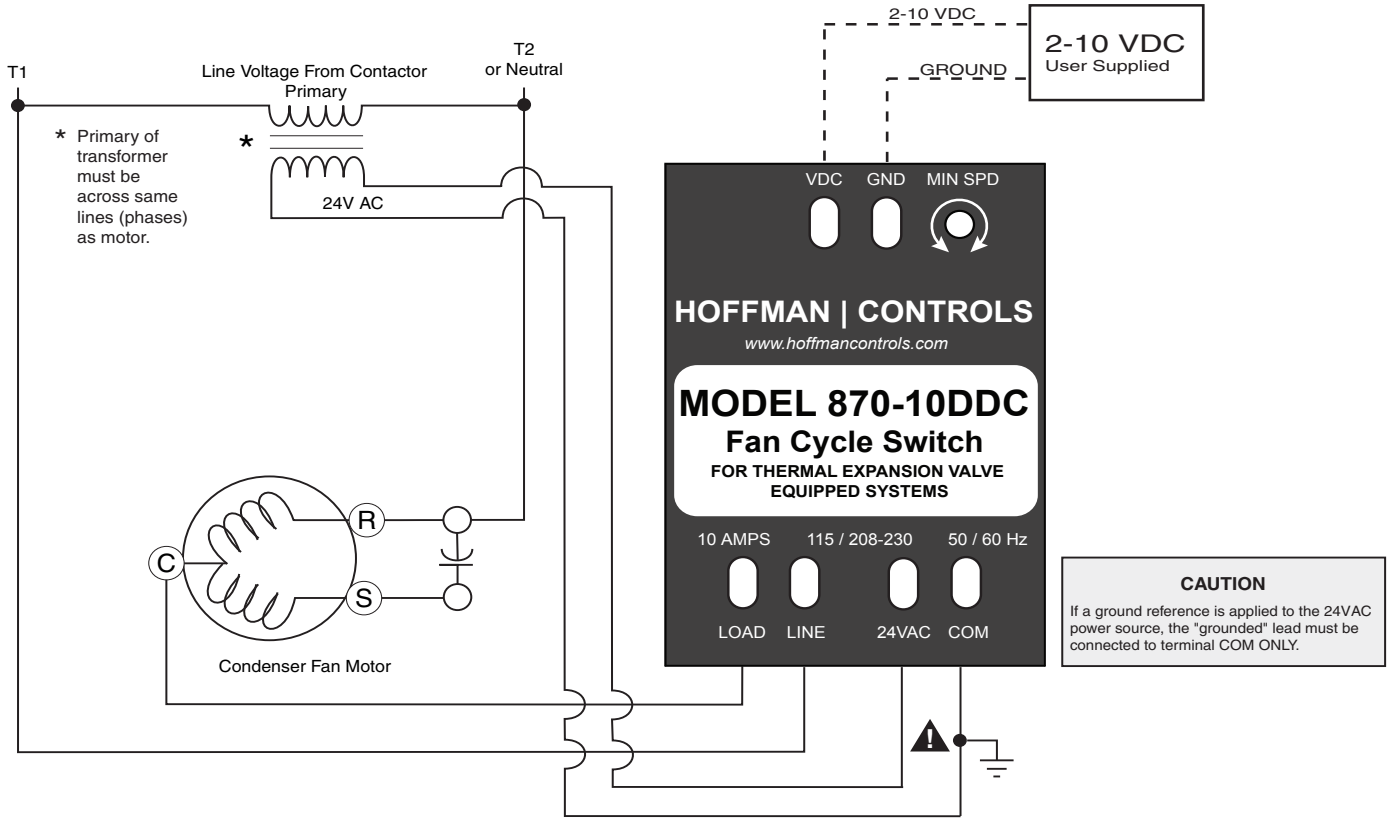
Set thermostat for cooling demand and apply voltage to the unit. Condenser fan will start if the dc control signal is above the 2.0 volt value required to trun on the motor.

1. Monitor the dc control signal and condenser motor voltage and current.
2. Verify that the motor is operating properly for the dc control signal level present.

   a. Below 2.0 vdc, the motor(s) will not start.

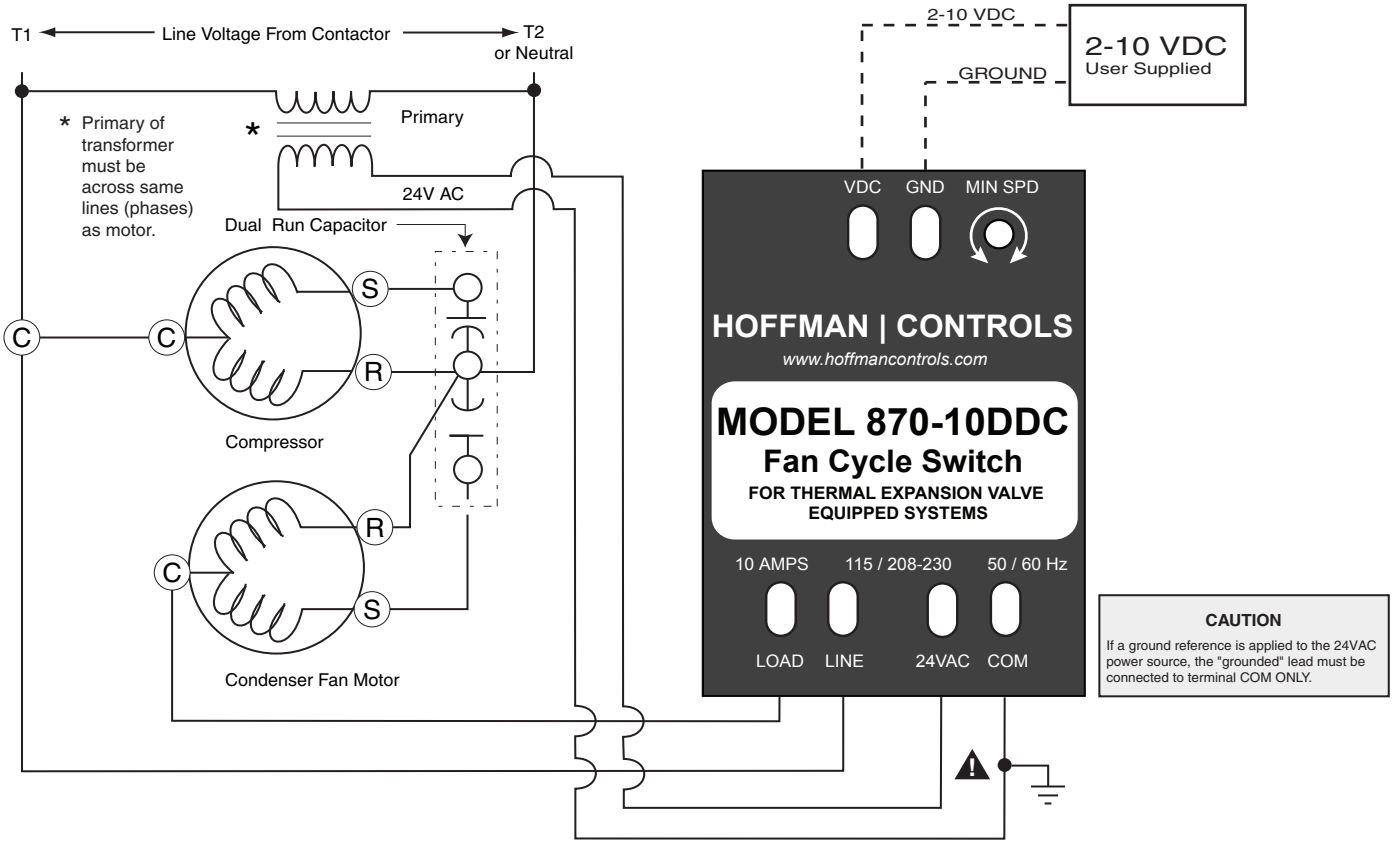
   b. Above 2.0 vdc but less than 9.5 vdc, the motor(s) will start at full speed for a few seconds and immediately modulate to a reduced speed proportional to the dc control signal level.

   c. Greater that 9.5 vdc, the motor(s) will start and remain at full speed until the dc control level falls below 9.0 vdc.



Single Run Capacitor Wiring Diagram for the 870-10D(DC)

Figure 2



Dual Run Capacitor Wiring Diagram for the 870-10D(DC)

Figure 3