

816-10DH
Electronic Head Pressure Controller

Description

The NEW 816-10DH Electronic Head Pressure Control modulates (varies) condenser fan motor speed in low ambient temperatures, varying the air volume through the condenser consequently regulating head pressure. This model's dual sensor input allows for the monitoring of two independent refrigerant circuits sharing the same fan motor(s).

In Heat Pump installations, the Heat Pump input is used to observe the presence of 24VAC. Heat Pump Mode "A" and "B" jumpers are configured based on a manufacturer's method of energizing the reversing (changeover) valve. Properly configured, the 24VAC input from the Heat Pump will override normal control and allow full speed fan operation when in the heating mode.

The sensor Range Adjust is provided to optimize the Controller's performance for specifically, TXV (thermal expansion valves) or Capillary Tube/Orifice systems. The Controller's 30°F span can be adjusted anywhere from 50°F – 80°F to 70°F – 100°F to ensure optimum performance for the specific expansion method. Variable condenser airflow is modulated from full to minimum speed over the selected span.

A variable Minimum Speed Adjustment is available to compensate for the bearing type employed by the fan motor. HCC recommends 400 RPM minimum for sleeve bearing motors and 200 RPM minimum for ball bearing motors.

The Control requires an external 24VAC transformer power source with its primary supplied by the same phase as the fan motor(s).

Features

- A special "Range Adjust" allows differentiation between TXV (Thermal Expansion Valves) and Capillary Tube/Orifice applications for optimum low ambient performance.
- Multi voltage model.
- Applicable for all refrigerant types.
- Eliminates the need for system penetration.
- Monitors liquid line temperature (liquid subcooling).
- Full voltage start ensures proper fan rotation.
- Cycles fan "OFF" once minimum flow is achieved.
- Eliminates compressor "slugging" (oil migration).
- Simple field installation.
- Replaces fan cycling controls.
- Additional **Sensor Kit** — Part Number 100-0017-001.
- Optional **Adjustable Sensor Simulator** — Part Number 510-0027-000.
- Optional **Weatherproof Kit** (NEMA 3R) — Part Number 545-0202-006.

Application

The Controller is typically utilized on air-cooled condenser fan motors found in AC&R systems. They are used on the following motor types:

- Single Phase, single speed
- Sleeve or ball bearing direct drive
- Open frame — PSC or Shaded Pole
- Some Totally Enclosed Motors (TEC) with 60°C ambient rating may be applicable.

Minimum speed should be limited to approximately 400 RPM for sleeve bearing motors and 200 RPM for ball bearing motors.

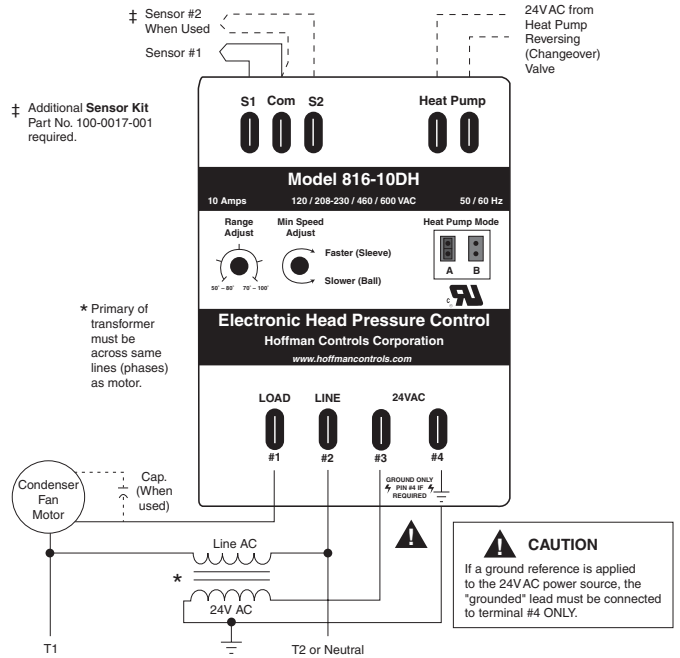
Motors used should be designed for Phase Proportioning and should be evaluated for suitability and acceptability. TEC (totally enclosed types) are not generally suitable or recommended.

Typical Air Conditioning and Refrigeration Applications

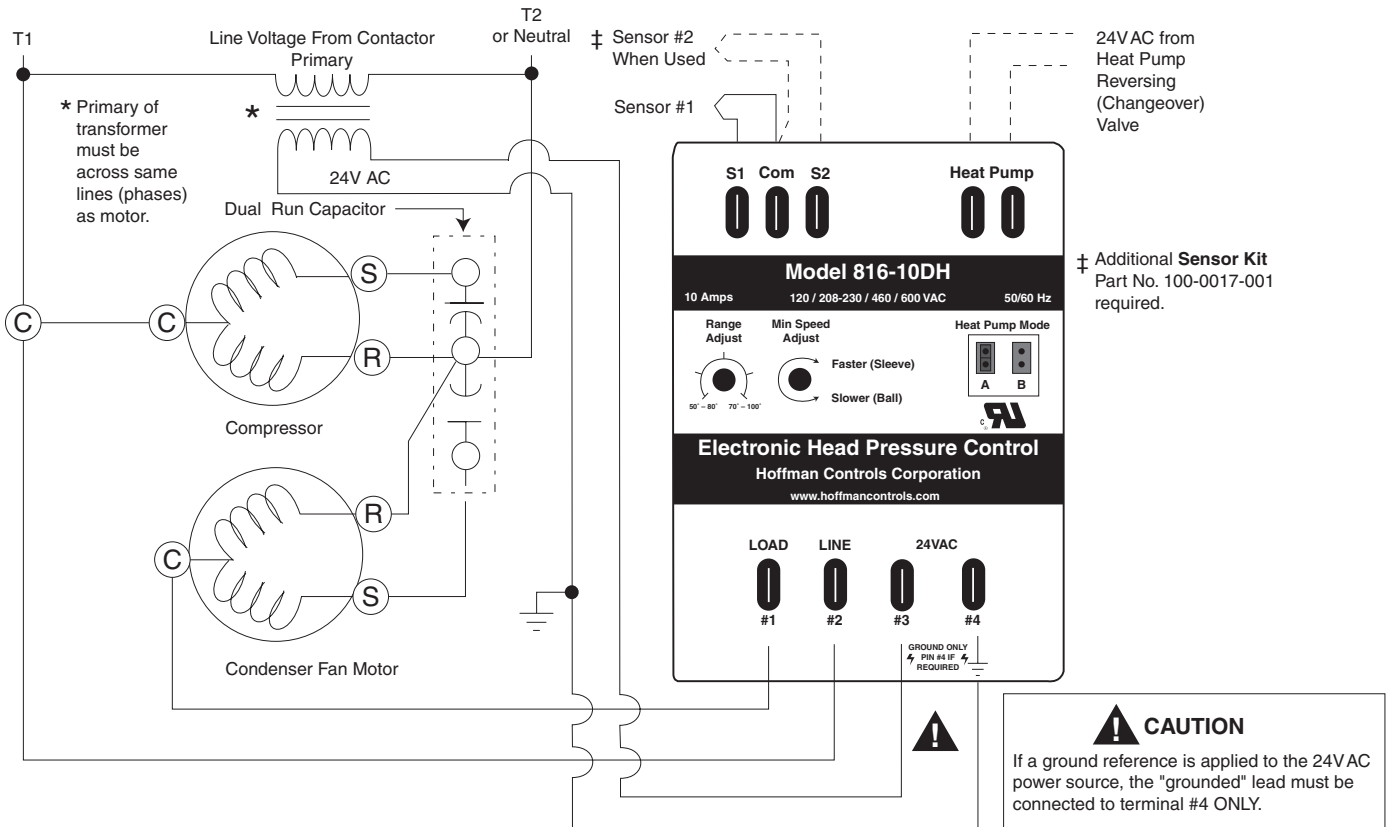
- Commercial air conditioning
- Supermarkets
- Computer rooms
- Frozen food storage
- Humidity control
- Glycol coolers
- Liquid heat exchangers

Specifications

Voltage Range (Nominal)	120/208 – 230/460/600
Current	10 Amps
Frequency	50/60 Hz
Voltage, Input (Nominal)	24VAC
Power @ 24VAC	4 VA
Inputs	
Sensor – Dual (strap on)	10K ohm @ 77°F
Heat Pump	24VAC
Outputs	
Fan Motor Control – Single Phase	120V – 600VAC
Adjustments	
Min. Speed Adjust	Ball Bearing – 200 RPM Sleeve Bearing – 400 RPM
Range Adjust (Span)	50°F – 80°F thru 70°F – 100°F
Heat Pump Mode Jumper	A or B
Environment	
Operating, non-condensing	– 30°F – +160°F
Dimensions (L x W x H)	5.56" x 3.32" x 1.25"
UL Recognized	File #SA5917



**Wiring for 816-10DH
Figure 1**



**Dual Run Capacitor Wiring Diagram for the 816-10DH
Figure 2**

HoffmanControls