Hoffman | Controls
Product Data

815-10D(DC)
Electronic Head Pressure Control

Description

The NEW 815-10D(DC) Electronic Head Pressure Control modulates (varies) condenser fan motor speed in low ambient temperatures, varying the air volume through the condenser to regulate head pressure. This model's 2-10V DC input allows for the control of a single refrigerant circuit . Only open, drip proof, PSC or Shaded Pole direct drive motors are applicable for motor speed regulation.

The controller will begin speed modulation as the DC input signal rises to 2.4V. Motor speed will be increased in proportion to the increase of the DC input signal. Maximum motor speed is reached when the DC input signal rises to 10.0 V DC.

Full synchronous motor speed is maintained until the DC input signal reaches 9.0 V DC. At the 9.0 V DC level the controller will re-enter motor modulation.

Motor speed will be decreased in proportion to the decrease of the DC input signal. Minimum motor speed is reached when the DC input signal drops to a 2.1 V DC level. As the DC input signal level drops below 1.9 V DC, the motor is turned (cycled) off.

The controls' purpose is to assure adequate pressure in low ambients:

a) for maintaining adequate pressure differential for the expansion device, and control of super heat.

b) assure an adequate pressure to eliminate freezing of the DX coil for A/C applications,

c) eliminate oil foaming (oil migration) and/or liquid slugging.

A variable Minimum Speed Adjustment is available to compensate for the bearing type employed by the fan motor. A minimum of 400-RPM for sleeve bearing motors, and 200-RPM for ball bearing motors is recommended. The 815-10D(DC) control does not include a transformer within the control, and wil require an external supplied 24 VAC power source. The primary of the 24V AC transformer must be on the same line (phase) as furnished to the motor. The 815-10D(DC) 1-10 VDC input signal must be a conditoned signal from a source such as a building management system computer. **IMPORTANT:** The V DC scaling of the "2-10V DC input signal" must be provided to the 815-10D(DC) for the range in pressure required as the result of the specific type refrigerant used. Typically, pressure transducers only provide a V DC or mA signal output for an antisipated minimum and maximum pressure range.

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Features

- Multi voltage model.(115/208-230)
- Applicable for all refrigerant types.
- Eliminates the need for system penetration.
- 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.
- Optional **Weatherproof Kit** (NEMA 3R) — Part Number 545-0202-007.

Application

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

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

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

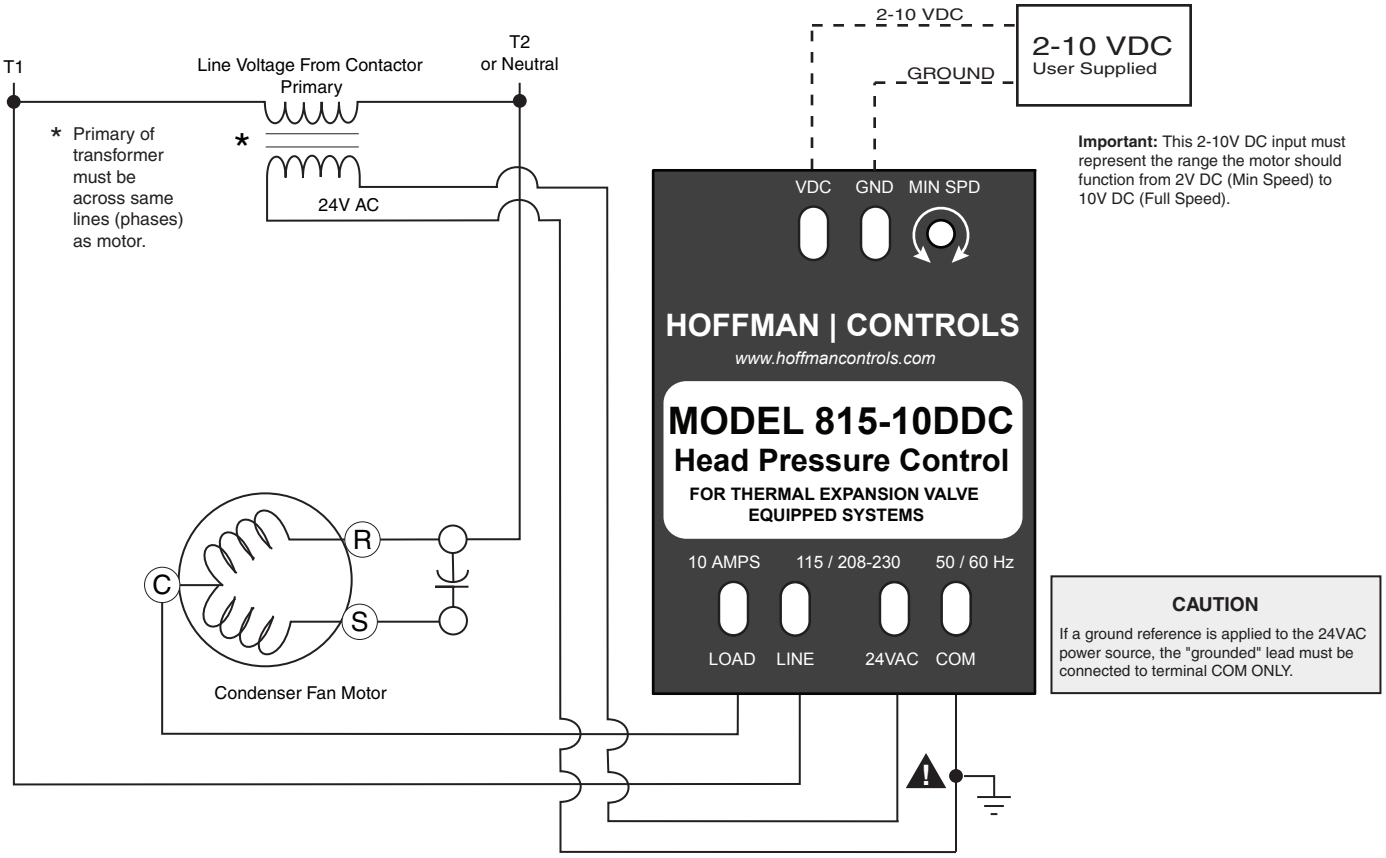
Motors used should be designed for Phase Proportioning and should be evaluated for suitability and acceptability. TEC (totally enclosed types) are not generally suitable or recommended.

Typical Air Conditioning and Refrigeration Applications

- Commercial air conditioning
- Supermarkets
- Computer rooms
- Frozen food storage
- Humidity control
- Glycol coolers
- Hospitals
- Any low ambient application

Specifications

Voltage Range (Nominal)	115/208–230/460/600
Current,	
FLA	10 Amps
LRA (Non Repetitive) at 25°C, 50/60Hz, 2 Secs	40 Amps
Frequency	50/60 Hz
Inputs	
External	2-10V DC
Outputs	
Fan Motor Control–Single Phase	115V–230 V AC
Adjustments	
Min. Speed Adjust	Ball Bearing–200 RPM Sleeve Bearing–400 RPM
Environment	
Operating, non-condensing	–30°F–+160°F
Dimensions (L x W x H)	5.56” x 3.32” x 1.25”
Weather Proof Kit (NEMA3R)	545-0202-007



Wiring Diagram for the 815-10D(DC)
Figure 1

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