

Hoffman | Controls

Product Data



865D-HP Three Phase Fan Modulating with Fan Cycling option Head Pressure Control

Description

The 865D-HP Control is an improved microprocessor based Three Phase Head Pressure Control that is a direct replacement for the 865-3AA, 865D and 865D-2 Series Controls. The 865D-HP can be used as a Fan Modulating Head Pressure Control or a Fan Cycling Head Pressure Control via a selection switch with up to two Temperature Sensor inputs or one 0-10Vdc or 4-20mA Pressure Transducer input. The Control varies the air volume through the condenser thus regulating head pressure for proper heat rejection in low ambient conditions.

The 865D-HP Control maintains a minimum pressure differential across the expansion valve to provide the proper rated capacity for all ambient operating conditions regardless of refrigerant types. This maintains proper system operating conditions, while assuring proper suction pressure (evaporator temperature) over the anticipated ambient operating range.

The 865D-HP Control is limited to 1/2 to 2 HP, three phase, 208-230/460Vac, direct connected, propeller type, condenser fan motor applications. Modulating applications require continuously variable speed High Slip tolerant/Ventilated (HS/V), 850/1150 RPM, direct drive, 56 Frame, vertical shaft designed motors approved by the motor manufacturer for continuous variable speed operation. The optional Fan Cycling Mode can use lower quality motors not designed for variable speed applications.

The 865D-HP Control is supplied with a NEMA 3R rainproof enclosure for field installation in poor weather/ambient conditions and includes an encapsulated Temperature Sensor and mounting hardware that is designed for fast response of liquid line temperature changes.

865D-HP Three Phase Head Pressure Control

Applications

A properly applied 865D-HP Head Pressure Control can be used to extend the operating range of A/C or refrigeration system, permitting operation at lower outdoor ambient temperatures. When more than two liquid lines require monitoring, use the HCC p/n 851-MS Series Multiple Sensor Selector to add up to six temperature sensors.

The 865D-HP Control typically modulates continuously variable speed HS/V (High Slip/Ventilated) three phase condenser fan motor(s). Two identical condenser motors, of same manufacturer, type, model, RPM and identical propeller fans, may be controlled by one 865D-HP Control. In either case, the total 8 amp maximum rating of the Control must not be exceeded.

The 865D-HP Fan Modulating Control can also be used as a Fan Cycling Head Pressure Control and can be field calibrated to optimize the fixed speed motor(s) ON/OFF points for air-cooled condenser applications.

Features and Benefits

The 865D-HP Control is factory calibrated for use with the supplied liquid line Temperature Sensor and is set for 50°F to 80°F operation with a typical minimum speed of 300RPM for variable speed motors. These settings can be field changed as required for both variable and fixed fan speed applications.

Optional 0-10Vdc or 4-20mA input signals are available and may be used when a pressure transducer or other control signals are desired. The 865D-HP Control will automatically sense the type of input signal being used, i.e., Sensor, mA or Vdc.

The Head Pressure (HP) MODE switch can be used to select either variable (MODULATE) or fixed (FAN CYCLE) speed Head Pressure Control operation.

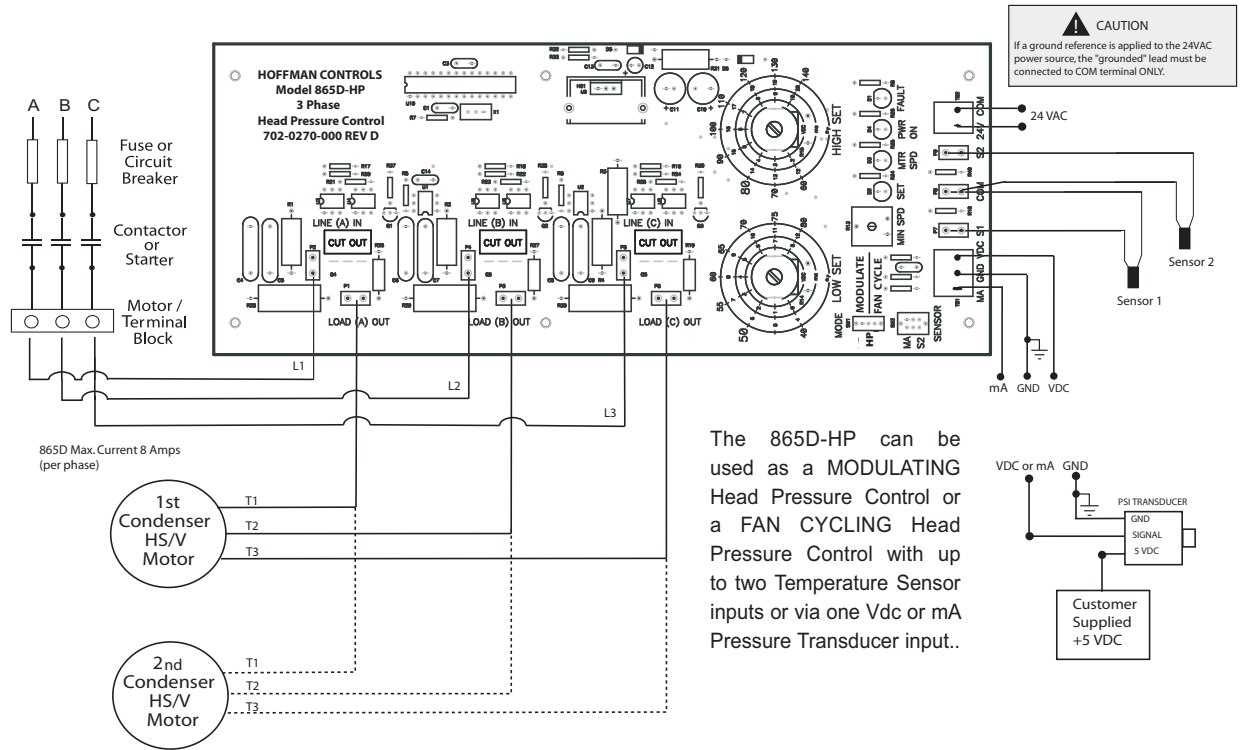
The MIN SPD potentiometer is used to set the Head Pressure Control minimum motor speed.

The LOW SET and HIGH SET potentiometers can be used to set the desired minimum and maximum input signal values to operate the motor from minimum to maximum motor RPM. These potentiometers also used to set the FAN CYCLE on/off values and include a temperature (°F), mA and Vdc scale.

Four LEDs are included that display when the power is ON, any FAULTS with the input power, Motor Speed and Set Point counter.

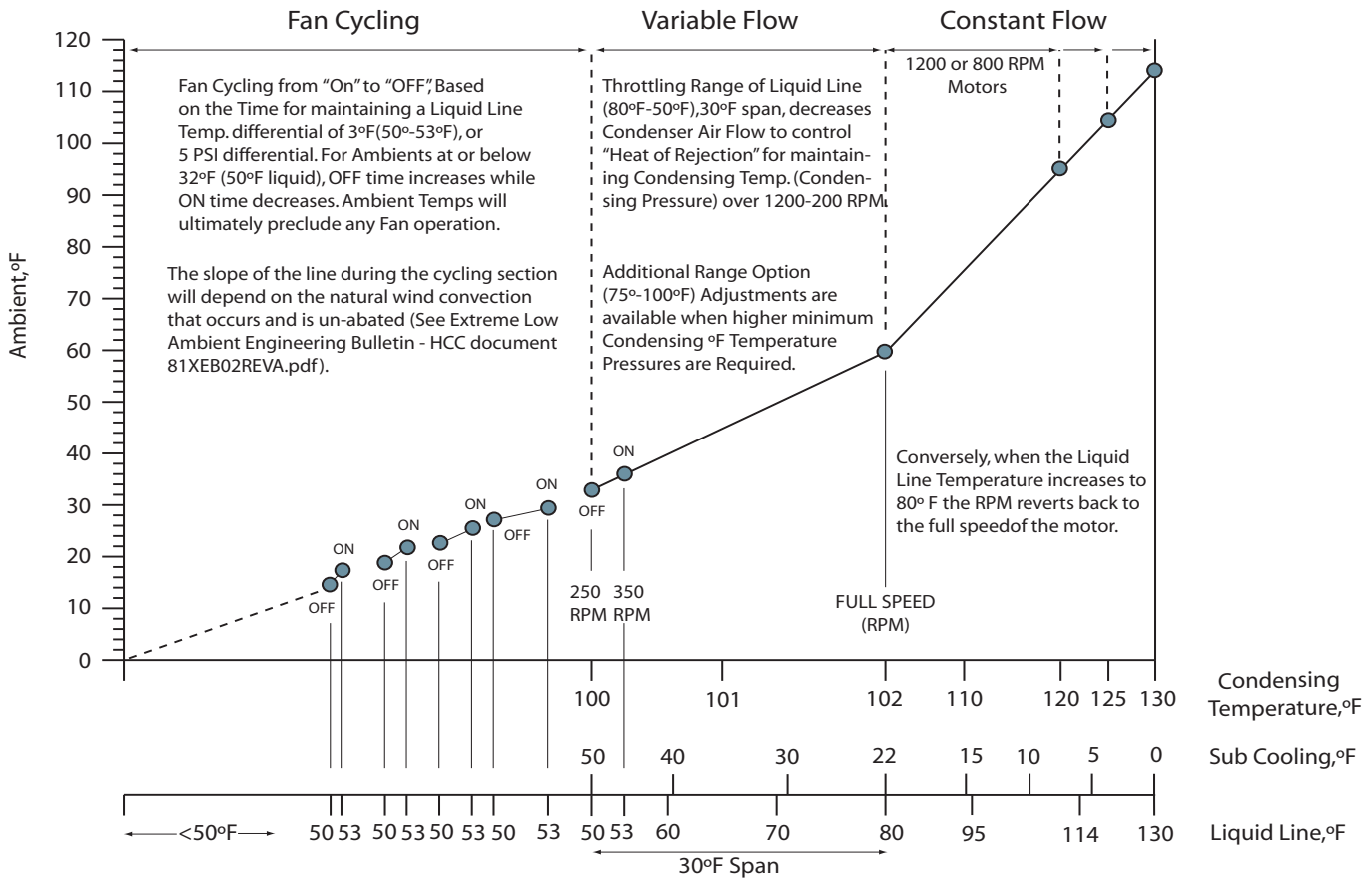
Specifications

Line Voltages Available	208-230/460Vac @ 50/60Hz
Current, Maximum	8 Amps
Input Power	24Vac, 4VA
Operating Temp: Non-Condensing,	-30°F(-34°C) to 160°F(71°C)
Fault Protection	Phase Sequence/Single Phasing
Enclosure types	Weatherproof NEMA 3R
Dimensions (L x W x H)	12.5" x 5.50" x 3.25"



The 865D-HP can be used as a MODULATING Head Pressure Control or a FAN CYCLING Head Pressure Control with up to two Temperature Sensor inputs or via one Vdc or mA Pressure Transducer input..

Low Ambient, Condensing, Sub Cooling, and Liquid Line Values for Constant, Variable, and Fan Cycling Operations



Typical Fan Operation with Ambient, Condensing, and Liquid Line Temperatures

Hoffman|Controls