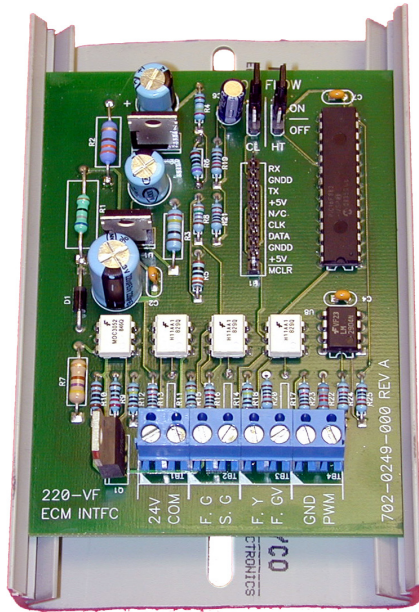


Hoffman Controls

Product Data

706-ECM(FFS) VariFlow™ Interface

ECM Furnace Motor Control



706-ECM(FFS) Variflow™ Interface

Introduction

The NEW 706-ECM(FFS) Variflow™ Microprocessor Interface allows for an ECM motor retrofit into existing PSC blower motor applications.

The 706-ECM(FFS) Interface builds on the success of the Patented Variflow™ Furnace Fan Speed (FFS) and Heat Pump Fan Speed (HPFS) designs that function only during the Cooling and Heating OFF Cycles.

The NEW 706-ECM(FFS) extends these functions to include Variable Air Volume flow rates before and after both Cooling and Heating Cycles.

Optional operation of the blower during the OFF Cycle can produce flow rates for maintaining air movement, air stratification, filtration, and purification requirements.

This comprehensive control for both the ON & OFF Cycles completes the total comfort solution

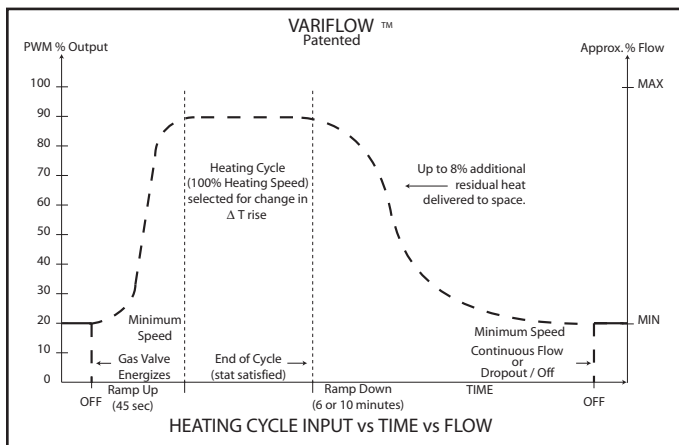
706-ECM(FFS) VariFlow™ Heating

The NEW 706-ECM(FFS) VariFlow™ Interface Control provides the patented pre and post Heating Cycle operation that was certified by AGA to provide up to 8% more residual energy from each 8 minute Burner ON and OFF Cycle. (See VariFlow™ Brochure Form 171-0103-000)

When demand for heat is detected, the 706-ECM(FFS) VariFlow™ function will prevent the blower motor from coming on at full RPM and introducing as yet unheated air into the space. Instead, the Blower speed is slowly ramped up to full RPM allowing air flow to be increased over 45 seconds while the heating system develops warm air for the space. Once the ramp up is completed, the Heating cycle continues at constant air flow without motor modulation to provide a specific Delta Temperature for the Net BTU Heating capacity selected.

At the end of the Heating cycle the 706-ECM(FFS) VariFlow™ function will ramp the blower motor speed, and resulting air flow down, over time. This procedure expels all of the residual heat from the heat exchangers, air distribution system, components & materials into the space. This is accomplished by bringing all components of the system back to room temperature during an 8 minute Burner OFF Cycle. OFF Cycles shorter than 7 minutes will reclaim heat proportionately.

After the declining flow ramp down of the Heating cycle, the VariFlow™ function may remain in a continuous minimum flow (25%±), or Cycle OFF. A continuous minimum flow will prevent stratification of air in the conditioned space, and provides air flow required for filtration and purification. This end of the ramp down state is a user selectable option.



Heating Mode Flow Response

706-ECM(FFS) VariFlow™ Cooling

The NEW 706-ECM(FFS) VariFlow™ Interface control also provides a 45 second ramp up at the start of the Cooling Cycle. Once the ramp up is completed, the Cooling cycle continues at constant air flow without motor modulation to provide a specific Delta Temperature for the Net BTU Cooling capacity selected.

At the end of a Cooling Cycle, a modified 10 second ramp down function occurs. The modified fast ramp down function precludes re-evaporation of moisture into the air. However, it can provide the same optional continuous 25%± flow, or remain OFF when indoor and outdoor geographic conditions allow.

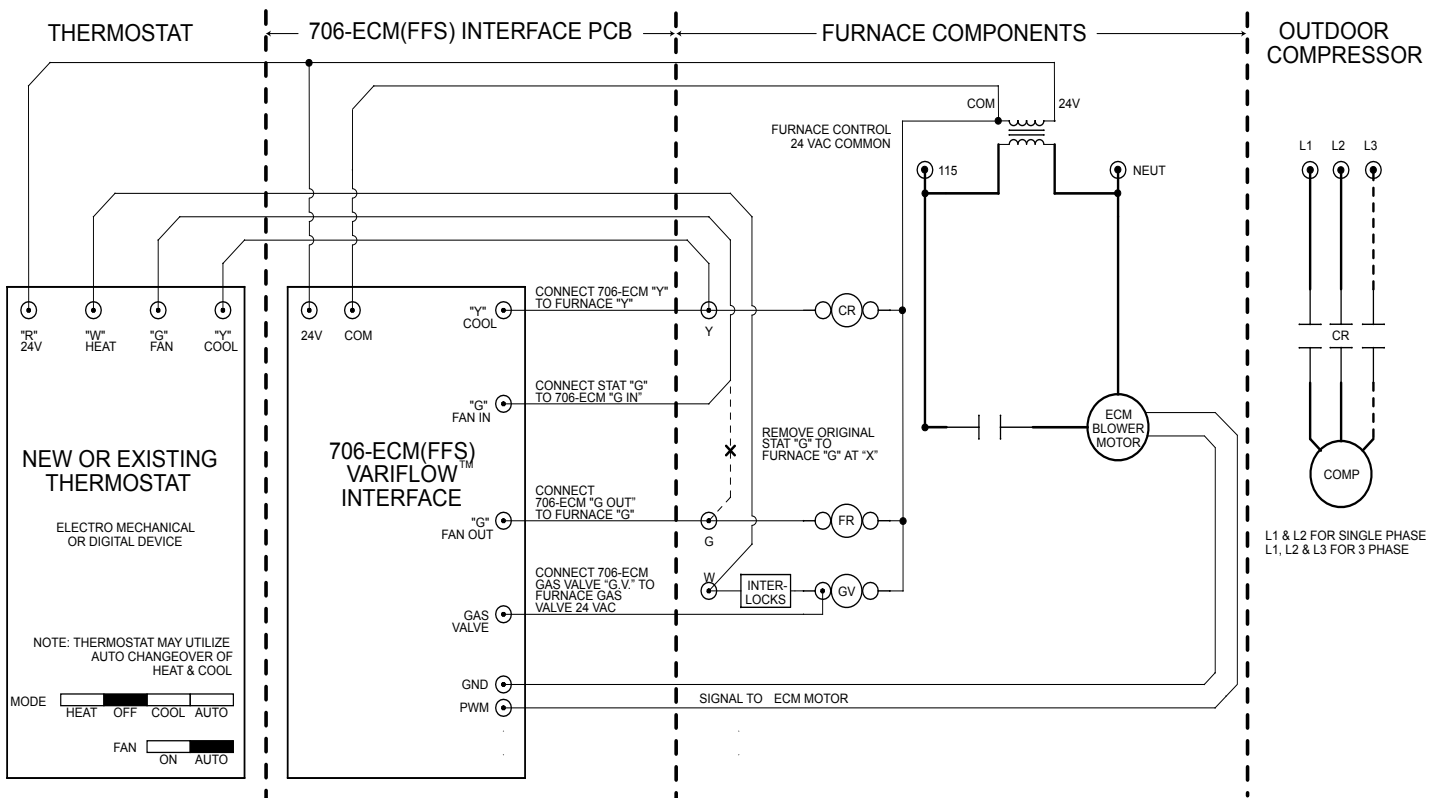
"Super Flow"

When applicable, the control can provide a measured flow rate of up to 15% more than the typical 400 CFM/Ton. This "Super Flow Rate" can increase the total BTU/Ton by 1000 BTU (8.33%), or to 13,000 BTU/Hr.

This can occur when ECM motors are selected that have a higher maximum rpm capacity than the original PSC motor. This additional capacity results in an increase of the Heat Transfer capacity, resulting coil temperature, and compressor COP. The results provide a greater total BTU capacity, efficiency, and increases total Sensible Heat removal.

Specifications

Motor Types	ECM (dc brushless) Motors
Minimum Speed	Field Adjustable
Input	24VAC
Output	5% to 100% PWM @ 80Hz 13.5 VDC, 10mA (max.)
Humidity	95%, Non Condensing
Ambient	32° – 120° F



706-ECM(FFS) Retrofit with Furnace Controls

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