



706-123S and 706-4S Series  
Fan Motor Speed Controllers

### Description

The 706-123S Series multiple voltage Electronic Fan Motor Speed Controller is designed to provide manually adjustable, proportional speed control for single phase shaded pole or permanent split capacitor (open frame) motors. The 706-123S Series may be used for any nominal voltage between 120 and 277 volts. The 706-4S may be used for nominal voltages of 460 through 480 volts. Variable Speed Controllers are applicable for speed adjustment of motor RPM. The 706-123S Series electronic controller assembly and heat sink is available in three models for three current ratings in multiple voltage applications. The 706-4S Series Controller is available in one model for 460 to 480 voltage applications.

Typical performance will provide speed adjustment approaching stall with a separate minimum speed limit. The minimum speed limit sets minimum RPM preventing motor stall. Minimum speed varies with motor loading.

#### NOTE

Phase proportioning (speed regulation) may increase motor temperature and motor noise as RPM is reduced for some motors. These conditions will vary depending upon motor design/characteristics.

### Application

The 706-123S and 706-4S Series Controllers are designed for use with permanent split capacitor or shaded pole motors that have been evaluated for speed control regulation. The design is for direct connected propeller (blade) or blower (squirrel cage) fan type applications, but may be applicable to other non-air moving type motor drive requirements typical of pumps, etc. Minimum speed setting may be limited depending upon the ventilating characteristics of the motor. Minimum speed should be limited to approximately one-half of full speed. Motors designed with thermal overload are recommended.

To ensure motor suitability, motors should be selected for characteristics for phase proportioning type control. In determining the suitability with a particular motor, special consideration must be given to the temperature rise of the motor, which may result from non-sinusoidal wave shapes. Motors should be tested over the entire range of operation and loading for both temperature rise and noise.

Applications should not exceed the FLA current rating for any given motor speed setting. Current increases with torque; therefore, maximum current will be reached at a point below full speed. See typical variable motor speed performance graph on the reverse side of this document.

#### Minimum Speed Adjustment

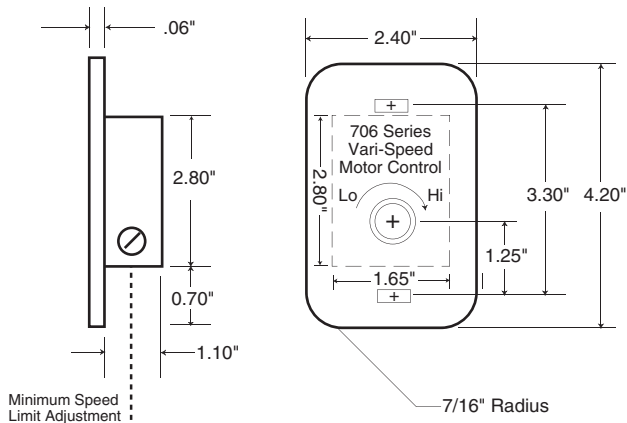
With the main potentiometer in full minimum CCW position:

- Adjust minimum speed limit to desired value (located on side of control case).
- Once the minimum limit is set, the main scale potentiometer will vary the motor speed from its preset minimum limit to full speed. The effective range of the pot will vary somewhat according to voltage being applied. The "effective adjustment range" will increase with higher voltages.

### Specifications

706-123S	5 Amps, 120 through 277 Volts
706-123SB	10 Amps, 120 through 277 Volts
706-123SC	15 Amps, 120 through 277 Volts
706-4S	5 Amps, 460 through 480 Volts

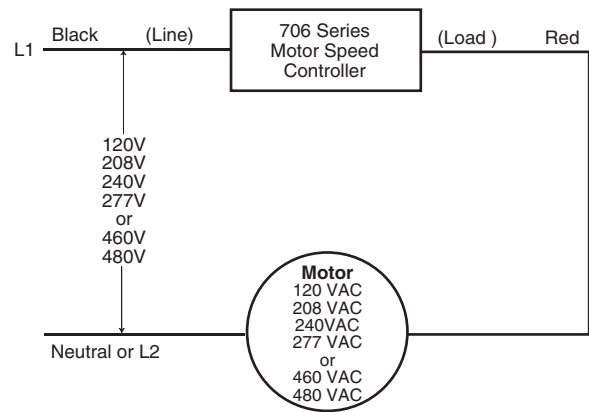
Motor Types	Permanent Split Capacitor Shaded Pole
Minimum Speed	Field Adjustable
Humidity	Condensation Free
Ambient	0° – 60° C
UL Component Recognition on all models – #E110492	



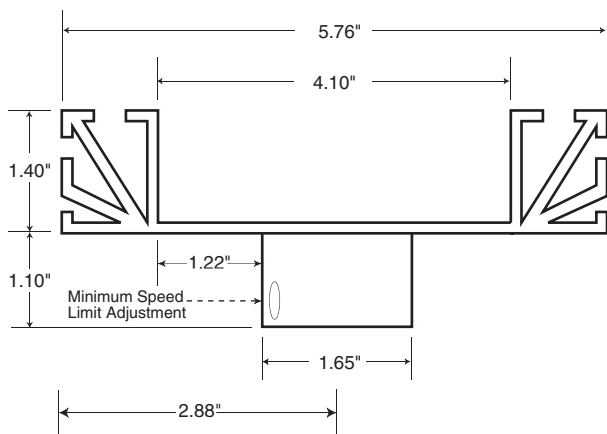
Side View

Front View

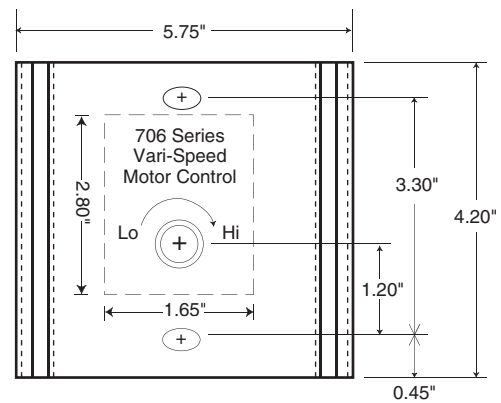
706-123S and 706-4S (5 Amp)



706 Series Typical Wiring

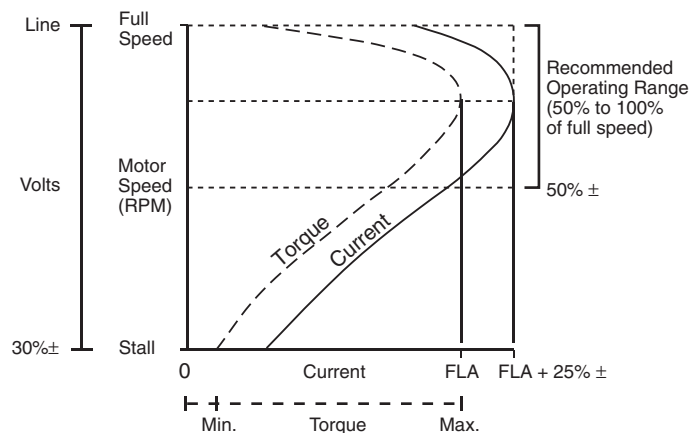


Top View



Front View

706-123SB (10 Amp) & 706-123SC (15 Amp)



Typical Variable Motor Speed Performance

## Hoffman|Controls