

Manual Fan Speed Controller



Features

- Suitable for supply & extract ventilation systems
- Flow rate reduction on centrifugal pumps
- Noise level reduction

Specification

Nominal Supply	230Vac/1Ph/50-60Hz
Control type	Jumper selectable: Hard start Normal start (as potentiometer)
On/Off switch	Separate to potentiometer
Starting seq.	Full speed for 6/7 secs
Minimum speed	Adjustable <i>via</i> trim pot (Default 100V)
Current ratings:	
FC-STL3D	0.1- 3.0A
FC-STL5D	0.2 - 5.0A
FC-STL10D	0.5 - 10.0A
Fuse ratings (Fast blow 'F' type):	
FC-STL3D	FF 5A
FC-STL5D	FF 8A
FC-STL10D	FF 16A (6*32)
Protection category	IP54
Dimensions:	
FC-STL3	85 x 110 x 75mm
FC-STL5/10	90 x 172 x 95mm
Ambient	35°C maximum
Country of origin	Belgium

Product Codes

FC-STL3D	Electronic speed controller 3A.
FC-STL5D	Electronic speed controller 5A.
FC-STL10D	Electronic speed controller 10A.

CE Compliance:

All electronic speed controllers comply with the following European Directives: EMC 89/336/CEE with modification 92/31/CEE and Low Voltage Directive 72/23/CEE.

Technical Overview

The FC-STL range of electronic speed controllers provide an economic means of speed regulation for voltage controllable single-phase AC motors.

Centrifugal fans, axial fans, propeller fans, and centrifugal pumps are prime candidates for electronic speed control.

Motor Compatibility

Speed controllers can only be connected to motors having appropriate characteristics. Motors must be voltage controllable, asynchronous, squirrel caged, Class 'F' wound, direct driven, with standard or external, high resistance rotors. They should be air cooled with a frame size sufficient to dissipate the additional heat generated when running at low speed/low airflow. It is recommended that motors have internal thermal protection.

Speed controllers operate most efficiently with conventional split capacitor or shaded pole motors. Six or eight pole motors are suitable but four pole motors are preferred as they have a greater control range. Two pole motors can be used but are difficult to control at low speeds (below 600 rpm) and can cause start-up problems at low voltages. If there is any doubt regarding a motor's compatibility with electronic speed controllers, contact the fan or motor manufacturer for guidance.

Selection Criteria

Motors must be well loaded for optimum speed control, so choose one that is just big enough for the application. The motor load must be at least 75% of the nominal power of the motor at maximum speed. Choose a speed controller with a maximum current that is just larger than the nominal motor running current, i.e. if motor rating is 2.95 amps, select a controller with a maximum current of 3 amps.

Several motors can be connected to one speed controllers long as the controller's maximum current is not exceeded. Although rare, some motors can have a higher current consumption, when run at lower voltages, than the motor's nominal current at design voltage. The highest current should be used when selecting the speed controller. These controllers are not suitable for use with some back up generator systems.

Fused Mains Isolator

It is recommended that a fused mains isolator is installed upstream of the speed controller. The fuses should be of the slow blow type with a current rating that is the same as the speed controller's internal fast blow fuse.

Nominal Current Range

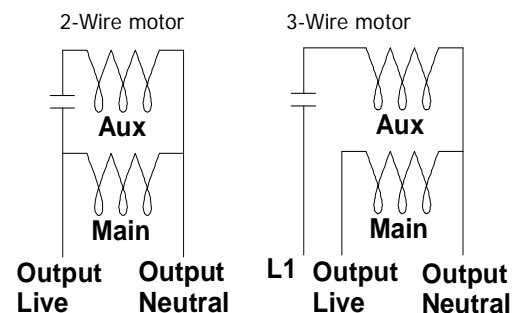
The speed controller Nominal Current Range refers to the nominal current rating of the motor and is based on a maximum ambient of 30°C. The speed controllers will accept a motor starting current that is up to 3 x greater than the maximum nominal current of the speed controller. Contact Sontay for further advice if the motor starting current is greater than this amount.

Minimum Speed Adjustment

The minimum speed is factory set to 100V which should be suitable for all applications. However, the minimum speed can be adjusted via the trim potentiometer on the PCB.

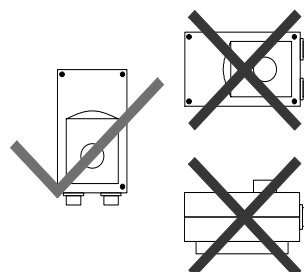
2 & 3 Wire Motors

All speed controllers are suitable for use on two or three wire motors. An additional terminal is provided for this purpose. If a two wire motor is used, the auxiliary terminal can be used to bypass the main switch. Alternatively, it can provide a 230Vac switched output to ancillary equipment.



Mounting

Always mount the FC-STL vertically on a flat surface.



Installation

1. The FC-STL should only be installed by a competent, suitably trained technician, experienced in installation with hazardous voltages. (>50Vac & <1000Vac or >75Vdc & 1500Vdc)
2. Ensure that all power is disconnected before carrying out any work on the FC-STL.
3. Maximum cable is 2.5mm², care must be taken not to over tighten terminals.
4. Undo the four retaining screws that secure the housing lid.
5. Remove the lid which can then be put aside. Take care not to loose the fixing screws.
6. Fix the housing to a suitable flat surface, using the four fixing screws and raw plugs provided.
7. Feed the cable through the waterproof gland and terminate the cores at the terminal blocks. Leaving some slack inside the unit, tighten the cable gland onto the cable to ensure watertightness.
8. Select the "start" up type JP1 (see below).
9. Replace lid, tighten the four lid fixing screws.
10. Switch the power on to the controller and check correct operation.

Start Up

Hard Start (default),

With the jumper fitted onto JP1, the motor will always start (or restart) at maximum speed for 8-10 seconds, after that the motor speed automatically follows the position of the potentiometer.

Normal Start,

With the jumper removed from JP1, the motor will start according to the position of the potentiometer.

Connections

On/Off switch Fuse JP1 Min. speed adjustment

