

This publication contains the installation, operation and maintenance instructions for *Vair-Flow*® 2 Speed Controller.



Carefully read this publication and any supplemental documents prior to any installation or maintenance procedure.

Loren Cook Product Guide, *Vari-Flow*® Motor and Controls, provides additional information describing the equipment, available accessories and specification data.

For additional safety information, refer to AMCA Publication 410-96, *Safety Practices for Users and Installers of Industrial and Commercial Fans*.

All of the publications listed above can be obtained from:

- lorencook.com
- info@lorencook.com
- 417-869-6474 ext. 166

For information and instructions on special equipment, contact Loren Cook Company at 417-869-6474.

Storage

If the controller is stored for any length of time prior to installation, store controller in the original packaging inside from the weather and keep temperature between -22°F to 122°F (-30°C to 50°C).

Installation

The VF2SC can be mounted two ways. The first option is to mount the VF2SC to a DIN rail. The second option is to mount it with four screws through the provided mounting holes.

Location and Maintenance

Consider the following points while choosing a location for the Vari-Flow 2-Speed Controller:

- Less than 100 feet of wiring to motor.
- Install the controller protected from weather.
- Do not place the controller on the floor.
- Maintain a temperature between 30°F to 110°F (-1°C to 43°C). A temperature beyond this range may cause condensation and sweating of metal parts.
- Maintain a low humidity, dry, and clean atmosphere. Ensure that the controller is not in the path of blowing dust, rain or snow.

Operation

This device contains a 24V power supply required by Vari-Flow Standard EC Motors. Vari-Flow motors operate on a 2-10V signal. Below 2V, the motor stops. The dial does not indicate voltage, but a range of available voltage from max to min. Motors with motor-mounted speed control dials should have dials positioned as follows:

- Type M: Fully clockwise (100%)
- Type N: Fully counterclockwise (0%)

Damper control can be achieved by use of the auxiliary contact. Contacts activated at 1.85V. Wire all low voltage components before applying line voltage to motor or controller. Stop position on the left-hand dial sends a 0V signal to the motor. Motor still has power.

‘MODE’ Selection Dial

The ‘Speed Selector’ selection dial has four settings.

- ‘**A**’ controls the fan using ‘FAN SPEED A’ dial.
- ‘**B**’ controls the fan using ‘FAN SPEED B’ dial.
- ‘**Stop**’ turns off the control signal to the motor, however, the controller and motor are still powered.
- ‘**Auto**’ allows selection between ‘FAN SPEED A’ and ‘FAN SPEED B’ based on an external switching device (provided by others) connected at ‘Dry Contact Input.’

Status Indicator Key

- **Solid Red:** Fan and controller are powered, but signal to control is 0V.
- **Solid Blue:** Controller is in ‘Auto’ mode and fan is operating at speed set by ‘FAN SPEED A’ dial.
- **Solid Green:** Controller is in ‘Auto’ mode and fan is operating at speed set by ‘FAN SPEED B’ dial.
- **Flashing Blue:** Controller is in manual mode and fan is operating at speed set by ‘FAN SPEED A’ dial.
- **Flashing Green:** Controller is in manual mode and fan is operating at speed set by ‘FAN SPEED B’ dial.
- **Flashing Blue/Green:** Controller is in ‘Auto’ mode but is not receiving a signal from ‘Dry Contact Input.’ Check to make sure switch or relay is properly wired.
- **Flashing Red:** Controller does not detect a motor. Check that the motor is properly wired to the 2-Speed Controller and that the motor is powered.



Wiring

All wiring should be in accordance with local ordinances and the National Electrical Code, NFPA 70. Ensure the power supply (voltage, frequency, and current carrying capacity of wires) is in accordance with the motor nameplate.

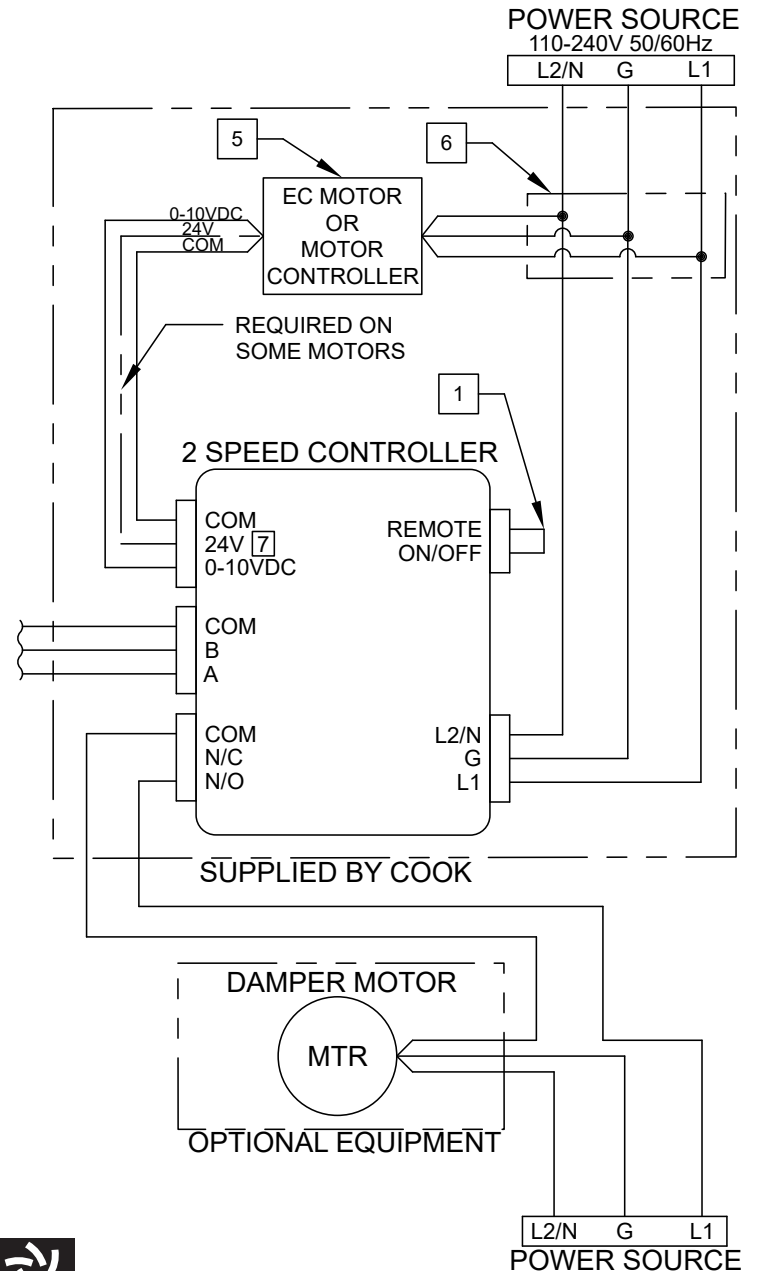
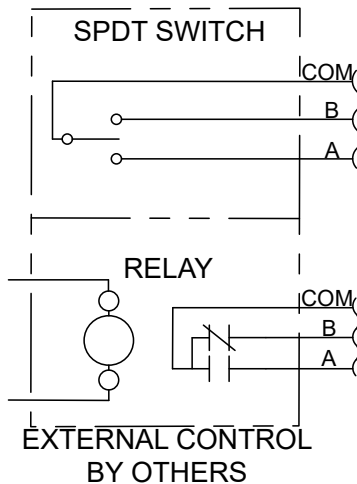


Follow the proper wiring diagram provided with the 2-Speed Controller.

Wiring Diagram

Notes

1. For remote on/off control remove jumper and wire to SPDT switch or relay
2. Schematic is intended to show interconnection of devices provided by Cook
3. All other devices, wiring, installation and control schemes are the responsibility of others
4. For more information, refer to IOMs and Vari-Flow controls application guide.
5. For detailed wiring see EC motor or Motor controller specific submittals, supplements, and IOMs.
6. Three phase motor controllers will require separate power source.
7. 24V has a combined 0.5A Max output
8. Aux Contact relay rated for 10A @24 - 250VAC, 10A @ 30VDC



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! WARNING

Voltage Warning:

Low-voltage control wires and line voltage power wires must not be installed in same conduit. Failure to follow these instructions could result in malfunction or damage.

Disconnect Warning:

ALWAYS disconnect power prior to working on fan. Failure to comply with these safety precautions could result in property damage, serious injury, or death.