

VSM-CP Sensor Probe Assembly

Procedure to apply VSM-CP2 / CP3 Sensor Probe (Identity Number 1049A)

This assembly is intended for use with the VSM-CP2 or -CP3 variable speed controller. When properly applied to a bell-mouth shaped fan inlet, this assembly will provide a pressure signal proportional to airflow.

1. Connect a 0-2" water column pressure gauge to the end of the pressure probe.
2. With the motor operating at full speed bring the lower tip of the sensor probe into the same plane as the lower end of the annular flow area. Be careful not to touch the spinning fan blade. Stay clear of motor mounts that might create turbulence. Note the negative pressure reading.

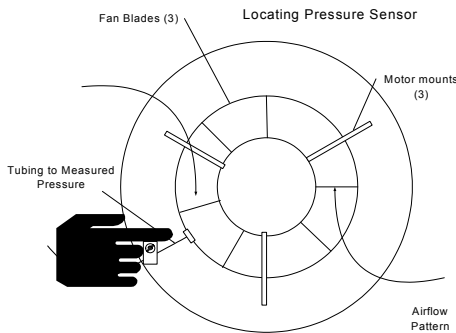


Figure 1

3. Take several additional measurements around the outer rim of the annular flow area. Attempt to identify the point with the highest-pressure reading in the least turbulent area.
4. Once identified, note the pressure reading and mark the position. Turn power off and wait for the fan to stop turning. Hook the U-clip over the edge of the annular flow ring (see Figure 2) at the same point as was previously identified, and snug it up so U-clip is fully engaged.

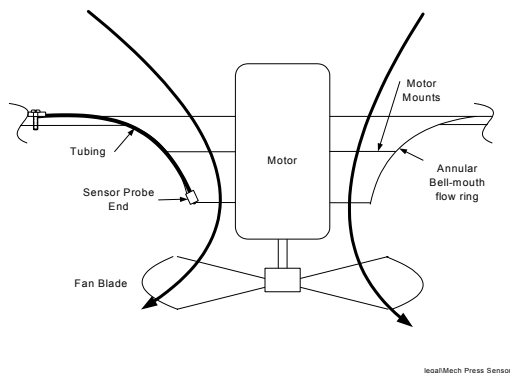


Figure 2

5. Bend the copper tubing across the face of the annular ring and secure the tubing using the provided plastic tubing clip. Turn power on and check if the pressure reading is relatively close to the previous reading. Turn power off.
6. Connect the end of the sensor probe to the pressure sensor located on the VSM-CP2 or -CP3 controller using 1/8 inch internal diameter flexible plastic tubing. *Always connect the highest pressure (either pressure or vacuum) to the end of the pressure sensor marked “+”.* Note in Figure 3 below the lower pressure is at the fan, therefore the flexible tube is connected to the “-” side of the pressure sensor.
7. In many applications, the opposite side of the pressure sensor (marked “-”) will be referenced to another pressure, such as the pressure in a duct. Use a 1/8 inch inside diameter flexible plastic tube to connect to the reference pressure, if needed.
8. A typical installation is shown in Figure 3 below.

Connections to Pressure Controller

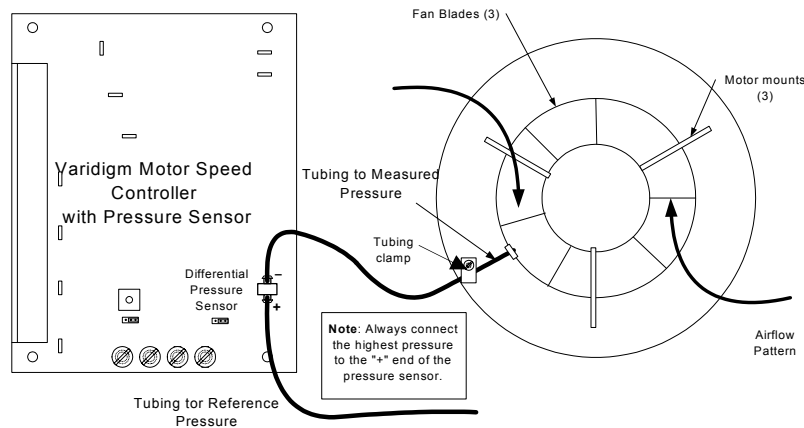


Figure 3

The VSM-CP2 or -CP3 controller is intended for use in air-moving applications, but other applications may exist. The controller's ability to provide consistent output based on pressure feedback makes it suitable for application in fan powered VAV terminal boxes, fan filter units, fan coil units, ventilators, etc.

The on-board differential pressure sensor may be piped to sense inlet fan pressure, pressure downstream of the device, or pressure in a controlled space.



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