

**Micro
Airflow/Temperature
Sensor
(PCI-1008)**



Overview:

PCI's airflow/temperature sensor is a low cost solid state device with a unique head design that addresses a wide range of mounting options. It has a patent pending sense electronic system giving improved accuracy over a wide temperature range. The separation of the drive electronics from the sensor head minimizes the effect of contaminating heat sources. Its flexibility and low cost make it an ideal solution for both evaluating systems and embedded applications.

Function:

As a measuring device, the ATS can be used with Polar Control's MSI-20 base unit (PCI-1055) with the use of an adapter (PCI-1055H). The unit is pre-configured to work with the MSI and requires no additional setup.

The ATS can also be configured to work as an electrically isolated switch, a digital sensor, or an analog sensor.

Digital (RS-232, I²C)

Please Contact info@polarcontrols.com for more information.

Analog (0-5V, PWM)

Dip Switch setting to adjust full scale (Remove cover to access)

1 2 3 4	
x x 0 0	Full Scale => 500 LFM
x x 0 1	Full Scale => 1000 LFM
x x 1 0	Full Scale => 1500 LFM
x x 1 1	Full Scale => 2000 LFM

0.0 Vdc corresponds to 0 LFM*. 5 Vdc corresponds to Full Scale.

The PWM operates at a frequency of 20 kHz. 100% Duty cycle corresponds to Full Scale.

Time Constant

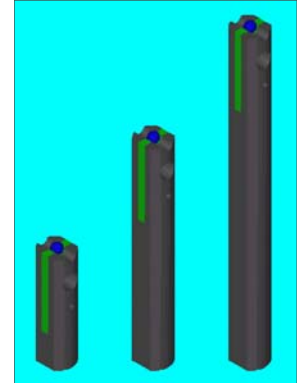
Dip Switch setting to adjust time constant (Remove cover to access)

1 2 3 4	
0 0 x x	T => 1/20 sec (no averaging)
0 1 x x	T => 1/20 sec
1 0 x x	T => 1/2 sec
1 1 x x	T => 2 sec

A reading is taken every time constant. The output is a running average of the 20 most current readings.

Mounting:

The ATS can be ordered with a variety of probe lengths to facilitate mounting and positioning. The handle portion of the probe can also be cut to the desired length (it is important that the probe have a minimum length of 0.7" - the length of the PC board). Care must also be taken not to cut the wires. There is a groove on the back to protect the wires after the probe is cut.



Specifications:

Range Of Sensor

50 LFM to 500, 1000, 1500, 2000 LFM

Accuracy of Reading

Airflow: +/- %5 of reading +/-10 LFM

Temperature: +/- 0.3° C with 50 FPM minimum airflow

Temperature Range

0 – 60° C

Input Power

11-13 VDC, 100 mA Max.

Output Voltage

Linear 0 – 5 Volts +/- 5 mV. 0V corresponds to 0 LFM on all scales.

Resolution: 10 Bits

*Output needs to be current buffered

Output signal time Constant

The output signal is averaged and updated every time constant (see dip switch settings).

Pin Out

Output Mating Connector - Amp #87977-4 with pin #87667-3

- | | |
|------------------------------|---|
| 1. Input Return | |
| 2. PWM (+) | |
| 3. PWM (-) | |
| 4. Comm for MSI-20 | |
| 5. Analog Temperature Output | |
| 6. SCK/SCL | |
| | 7. Input Voltage |
| | 8. Analog Airflow Output |
| | 9. SDO |
| | 10. 5.0V Reference |
| | 11. Calibration Port (factory use only) |
| | 12. SDI/SDA |



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