

# SAF Series Air Velocity Switch

## Thermal control and protection

The solid state SAF Series airflow switch assures dependable thermal control and protection for air cooled systems.

The SAF Series advantages include:

- Can drive logic circuits, audible/optical alarms and magnetic relays.
- Available in sealed and dust-proof versions.
- Can be socket mounted, PCB or hard wired.
- Available in 50 to 1500 linear feet per minute ranges.
- Not affected by ambient temperatures.
- 5 VDC design with low power dissipation.
- Signal conditioning not required.



The advanced SAF Series Airflow Switch provides early detection and protection from overheating in high-end computer systems and peripherals, large power supplies, HVAC equipment, medical diagnostic systems and other electronic systems requiring forced air cooling.

The design is based on a heated thermistor which monitors the airstream and detects a loss or reduction of airflow due to fan failures, clogged filters or obstructions in the air inlet/outlet. The thermistor temperature and, therefore, its resistance, is affected by changes in air velocity. The SAF thermistor is part of a sensing bridge which compares its own resistance against a reference circuit and determines the air velocity at which the device will trigger an output.

The innovative, low profile airflow sensor is easily mountable directly on the most densely populated circuit boards with as little as .625 inch spacing between boards, in sockets or bracket mount in plenums. All SAF models are complete, self-contained sensor/ alarm devices requiring no additional circuitry.

All SAF Series Sensors are designed to be used in conjunction with typical logic circuitry. They operate on a +5 VDC supply and their output provides an open collector NPN transistor with its emitter connected to ground (0v). This type of versatile output allows driving logic circuits, indicating incandescent or LED lights or even magnetic relays, from DC sources from 5V to 30V.



## THE SAF SERIES

**The Standard Series/SAF1005** – indicates an “alarm condition” on low or no airflow by turning output transistor “on”; output is similar to a closed mechanical contact between output and ground when in alarm condition. A round version, SAF1006 without a flange is available for less board space utilization.

**The Fail Safe Series/SAF1025** – an alternative to above-described series, a device failure indicates an “alarm condition” by turning the output “off”; similar to open contacts in alarm condition. It will operate with a wider hysteresis.

**The Hermetically Sealed Series** – withstands all board washing methods; more suitable for applications with hostile environments. Sealed versions of all the above units are available.

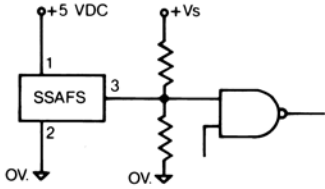
### SPECIFICATIONS

<b>Input Voltage:</b>	+5 VDC (±5%)
<b>Power Dissipation:</b>	½ W max
<b>Output:</b>	open collector, solid state, able to sink up to 100 mA to ground, from DC sources up to 30V
<b>Sensing range:</b>	50 to 1500 F.P.M.
<b>Sensing Tolerance:</b>	+10°C to +60°C see ambient temperature compensation curve
<b>Sensitivity:</b>	±25 F.P.M. from actual setting
<b>Hysteresis:</b>	Series SAF1005 (Standard Model) is typically 10% of the setting

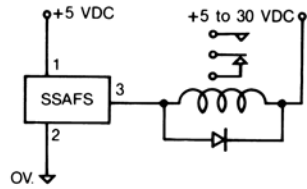
SAF MODEL OPTIONS			
Dust Proof		Hermetically Sealed	
Flanged	Round Base	Flanged	Round Base
SAF1005	SAF1006	SAF1007	SAF1008
SAF1025	SAF1026	SAF1027	SAF1028

## TYPICAL APPLICATIONS

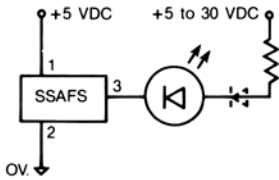
1 Controlling logic circuitry



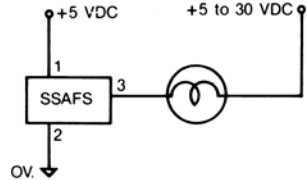
2 Controlling a relay



3 Controlling an L.E.D

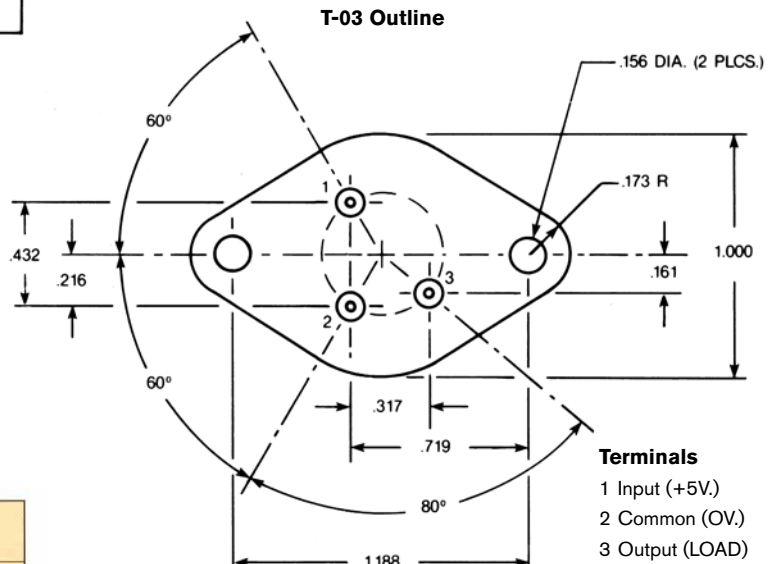
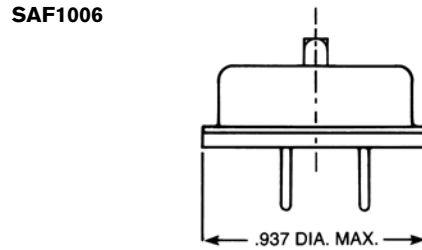
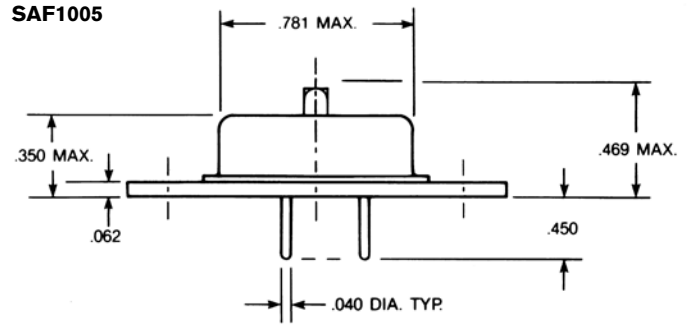
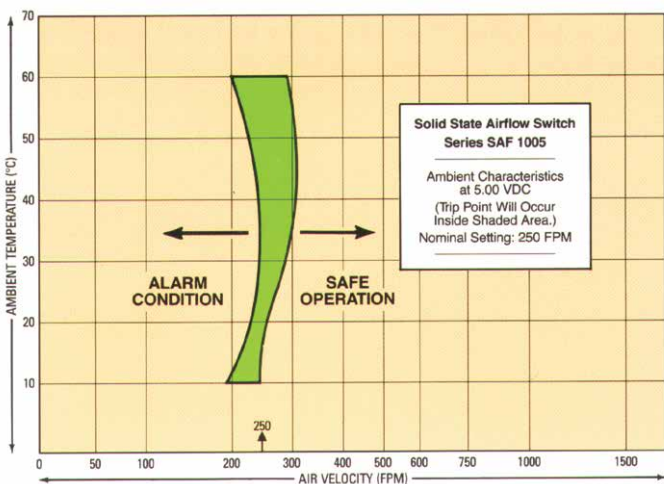


4 Controlling incandescents



## IMPROVED AMBIENT TEMPERATURE COMPENSATION

Warren G-V design criteria for the SAF Solid-State Airflow Sensor incorporates ambient temperature compensation techniques which provide close operating point tolerances over the ambient range of +10° to +60°C. The typical operating point versus ambient temperature curve for 250 FPM is illustrated.



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