



## | 2SE SERIES

Solid-State Vane Switch

### Introduction

The Klixon® 2SE solid-state vane switch has advanced, state-of-the-art airflow sensing. Successor to electromechanical vane types, the 2SE is designed to sense and protect against the loss of airflow in power supplies, data processing units, or any other commercial or military electronic equipment where it is necessary to recognize the loss or reduction of airflow.



### Features

- Solid-state
- High reliability
- Commercial or military grades
- Variety of switching modes



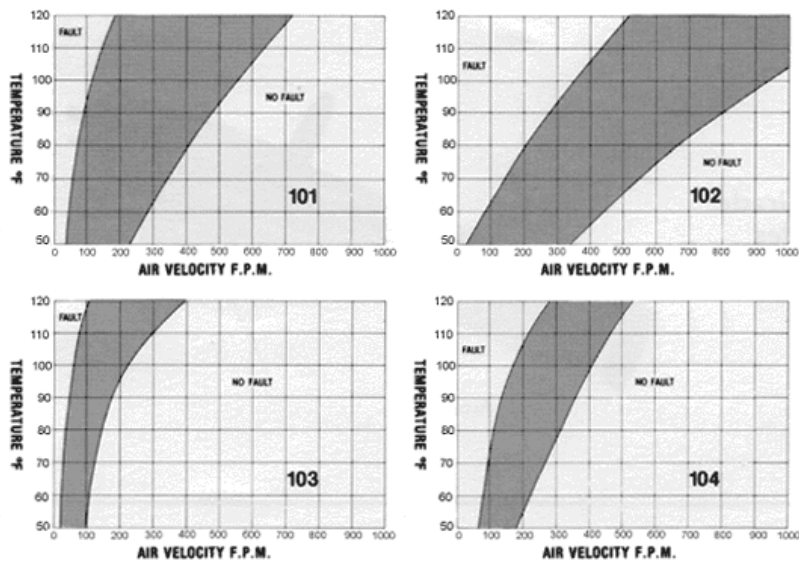
### SPEC OVERVIEW

<b>Supply Voltage</b>	30 VDC maximum
<b>Switching Capacity</b>	400 milliamps maximum
<b>Configuration</b>	SPST or DPST
<b>Reset</b>	Automatic or Manual
<b>Mode</b>	Normally open or closed
<b>Weight</b>	Approximately 20 grams
<b>Power Dissipation</b>	Approximately 3 watts
<b>Life</b>	100,000 cycles
<b>Operating Temp. Range</b>	10°C to 50°C (50°F to 120°F)
<b>Ambient Temp. Range</b>	Up to 150°C (300°F)
<b>Vibration</b>	10G, 10–500 Hz per MIL-STD-202, Method 202, Condition A
<b>Shock</b>	100G, for 6ms per MIL-STD-202, Method 213, Condition C
<b>Humidity</b>	10 days per MIL-STD-202, Method 106
<b>Salt Spray</b>	48 Hours per MIL-STD-202, Method 101, Condition B

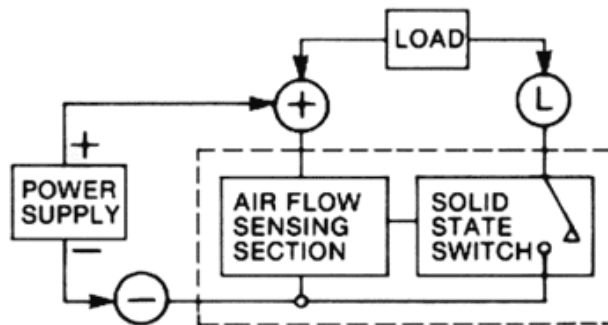


## TEMPERATURE VS. VELOCITY CURVE

Note: The gray region is the deadband, in which sensor could be in either the fault or the no-fault condition. Number on curve is for building part number of device. (Scroll down for information on building a part numbers, see at left for definitions.)

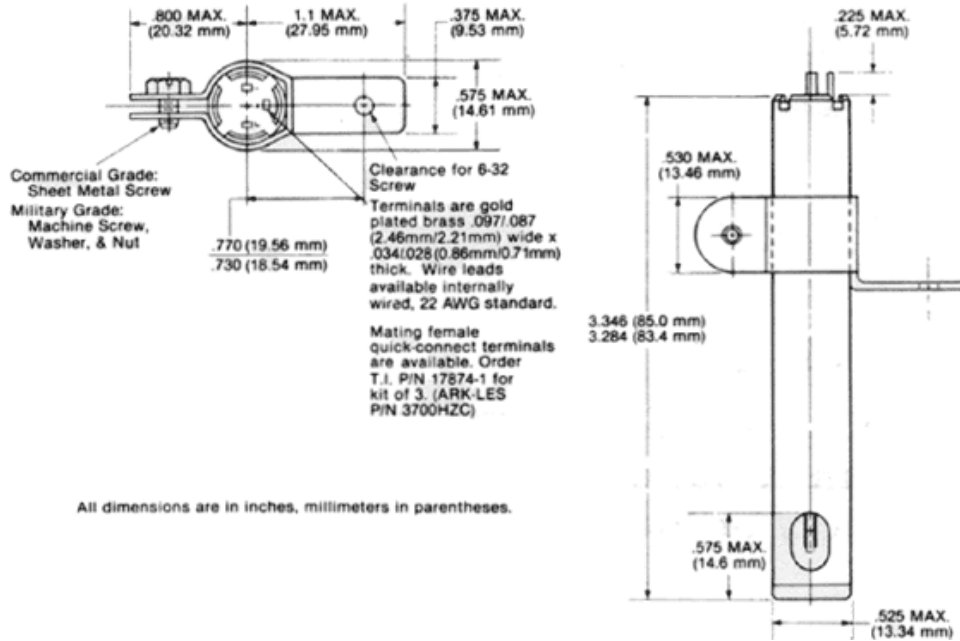


## WIRING DIAGRAM OF A STANDARD 2SE DEVICE



## CONFIGURATION

Below is the typical 2SE configuration, but others are available. Drawing is for reference only.



## POSITIVE TEMPERATURE COEFFICIENT (PTC) SENSOR

A Positive Temperature Coefficient (PTC) sensor provides the airflow sensing function. PTC sensors remain at a low, relatively constant level of resistance over a wide temperature range then abruptly increase resistance logarithmically at an elevated temperature known as an anomaly temperature. As the transition is approached, a slight temperature rise causes a dramatic increase in resistance.

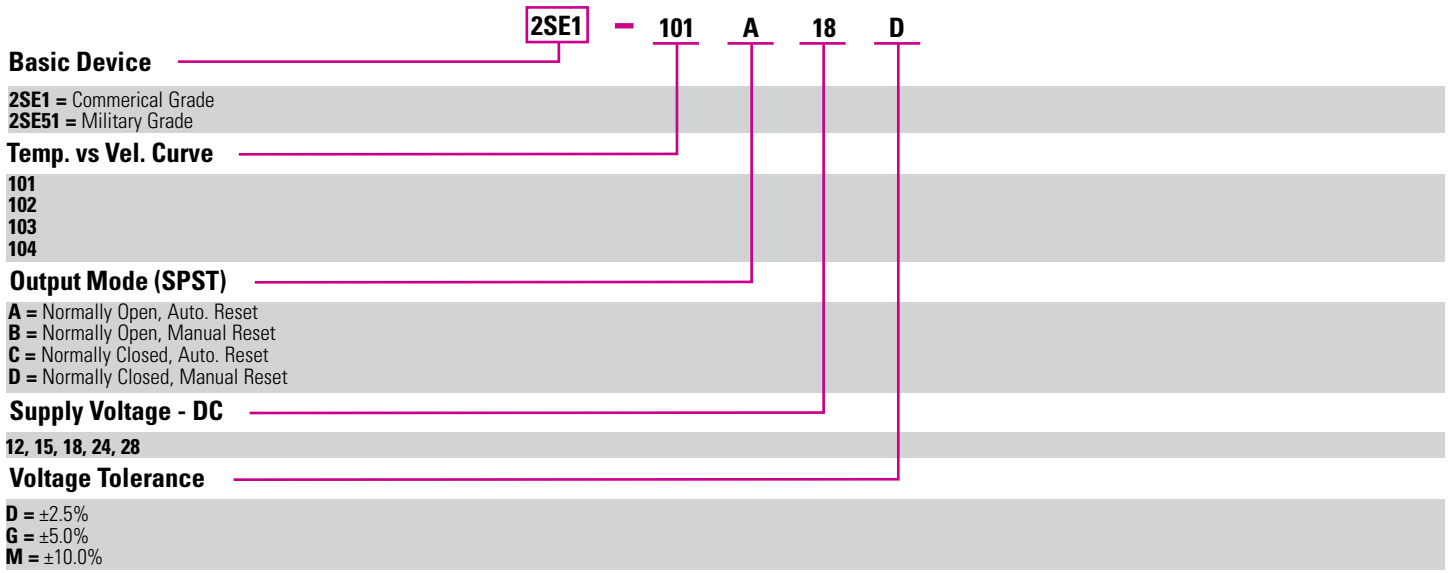
Power supplied to the PTC sensor will cause it to self-heat to a high resistance condition. Sufficient airflow will cool the sensor to its low resistance level. Insufficient airflow allows the sensor to self-heat and reach a high resistance state. This resistance change and accompanying decrease in current is used to trigger an output transistor or SCR.

## DEFINITIONS FOR THE TEMPERATURE VS. VELOCITY

**Curve** (at right)

**No-Fault:** Operation points within this region represent the normal state. (i.e. sufficient airflow to cool sensor to its low resistance level.)

**Fault:** Operating points within this region represent the anomaly state. (i.e. Insufficient airflow allows sensor to reach high resistance state.)



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