



| 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



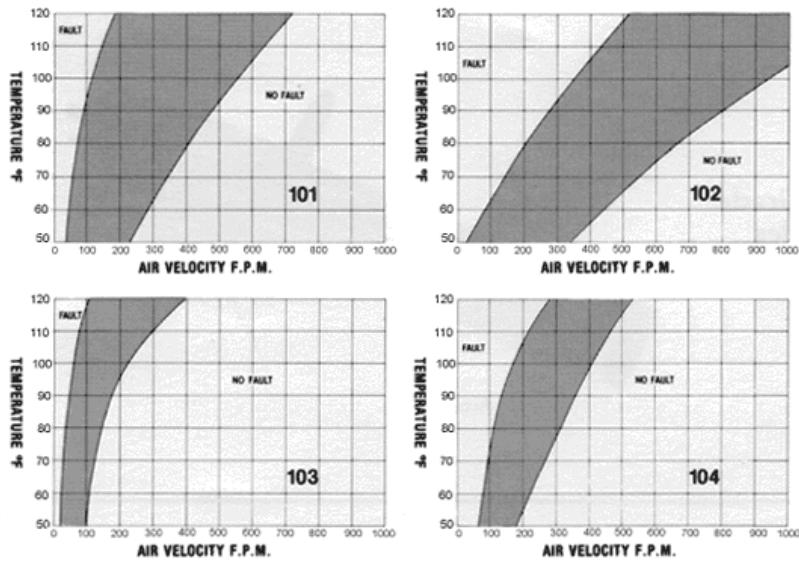
SPEC OVERVIEW

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

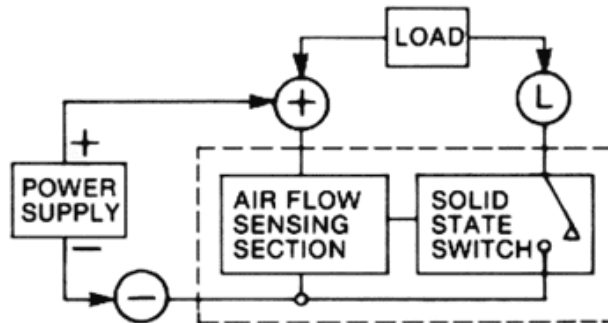


TEMPERATURE VS. VELOCITY CURVE

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.)

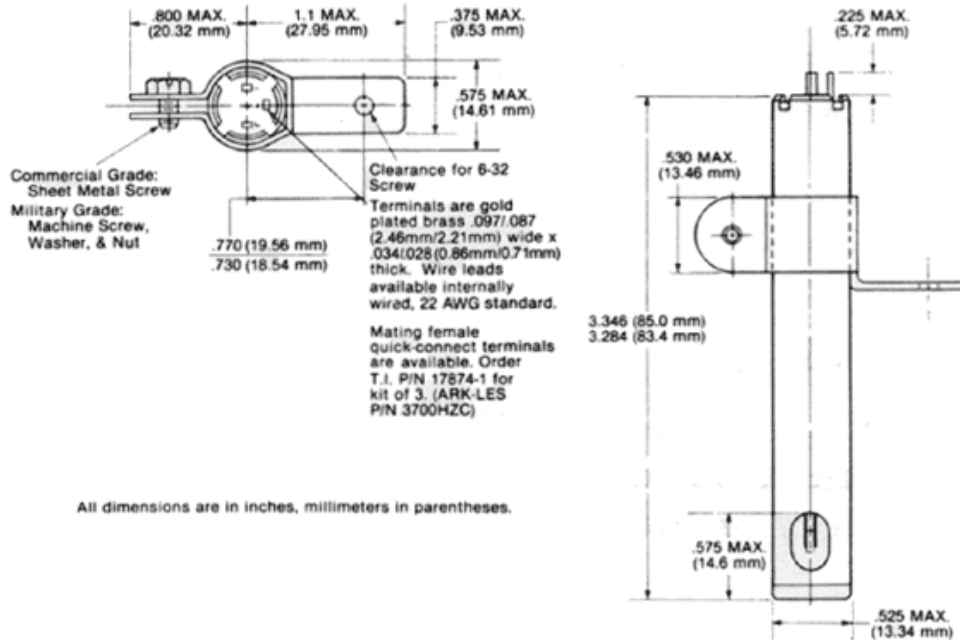


WIRING DIAGRAM OF A STANDARD 2SE DEVICE



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.)



2SE1 - **101** **A** **18** **D**

Basic Device

2SE1 = Commercial Grade
2SE51 = Military Grade

Temp. vs Vel. Curve

101
102
103
104

Output Mode (SPST)

A = Normally Open, Auto. Reset
B = Normally Open, Manual Reset
C = Normally Closed, Auto. Reset
D = Normally Closed, Manual Reset

Supply Voltage - DC

12, 15, 18, 24, 28

Voltage Tolerance

D = ±2.5%
G = ±5.0%
M = ±10.0%

CONTACT US

AUTHORIZED DISTRIBUTORS

Americas

Flame Enterprises
 Contact Name:
 Bob Correa, Director of Product Management
 Direct Phone: +1 (240) 236-9802
 E-mail: bcorrea@flamecorp.com
 info@flamecorp.com | Web
 Tel: 1-800-854-2255 or 1-818-700-2905
 Fax: 1-818-407-5080

Peerless Electronics
 Contact Name:
 Steve Gunther, National Sales Manager
 Direct Phone: +1 (516) 594-3509
 E-mail: sgunther@peerlesselectronics.com
 nysales@peerlesselectronics.com | Web
 Tel: 1-800-285-2121
 Fax: 1-800-222-8096

Europe, Middle East & Africa

Flame Enterprises
 Contact Name:
 Bob Correa, Director of Product Management
 Direct Phone: +1 (240) 236-9802
 E-mail: bcorrea@flamecorp.com
 info@flamecorp.com | Web
 Tel: 1-800-854-2255 or 1-818-700-2905
 Fax: 1-818-407-5080

AUTHORIZED SALES REPRESENTATIVES

Country	Representative	Contact	E-mail	Phone
Brazil	Sonnensys Technologies	Maury Sampaio	maury.sampaio@sonnensys.com	+55 12 99768 1100
Austria	Telemeter	Robert Jall	rjall@telemeter.de	49 906 70693-26
Belgium	JB Controls	Jean Jacques Boher	jboher@jbcontrols.com	33 (0)1 46 91 93 30
Czech Republic	Telemeter	Robert Jall	rjall@telemeter.de	49 906 70693-26
Denmark	Sensor Control Nordic	Peter BJÖRKDAHL	peter.bjorkdahl@scn.se	46 (0)8 122 006 92
Estonia	Sensor Control Nordic	Peter BJÖRKDAHL	peter.bjorkdahl@scn.se	46 (0)8 122 006 92
Finland	Sensor Control Nordic	Peter BJÖRKDAHL	peter.bjorkdahl@scn.se	46 (0)8 122 006 92
France	JB Controls	Jean Jacques Boher	jboher@jbcontrols.com	33 (0)1 46 91 93 30
Germany	Telemeter	Robert Jall	rjall@telemeter.de	49 906 70693-26
Greece	PanSystem	Stefano Vitone	stefano.vitone@pansystem.com	39 335 7169958
Israel	Admati	Dori Shifman	dori@admati.com	972 (0)50 331 4700
Italy	PanSystem	Stefano Vitone	stefano.vitone@pansystem.com	39 335 7169958
Latvia	Sensor Control Nordic	Peter BJÖRKDAHL	peter.bjorkdahl@scn.se	46 (0)8 122 006 92
Lithuania	Sensor Control Nordic	Peter BJÖRKDAHL	peter.bjorkdahl@scn.se	46 (0)8 122 006 92
Luxembourg	JB Controls	Jean Jacques Boher	jboher@jbcontrols.com	33 (0)1 46 91 93 30
Netherlands	TBD			
Norway	Sensor Control Nordic	Peter BJÖRKDAHL	peter.bjorkdahl@scn.se	46 (0)8 122 006 92
Poland	Radiotechnika	Tomasz Póltoraczyk	tpoltoraczyk@radiotechnika.com.pl	48 7132 70 765
Portugal	PanSystem	Stefano Vitone	stefano.vitone@pansystem.com	39 335 7169958
Slovakia	Telemeter	Robert Jall	rjall@telemeter.de	49 906 70693-26
Spain	PanSystem	Stefano Vitone	stefano.vitone@pansystem.com	39 335 7169958
Sweden	Sensor Control Nordic	Peter BJÖRKDAHL	peter.bjorkdahl@scn.se	46 (0)8 122 006 92
Switzerland	JB Controls	Jean Jacques Boher	jboher@jbcontrols.com	33 (0)1 46 91 93 30
Turkey	Eltronik	Ergun Kosem	ergun@eltronik.com	90 312 440 7815
UK	Charcroft	Julie Protheroe	julie.protheroe@charcroft.com	01591 612240
Australia	AeroDefense	Trent Ralph	trent@aerodefence.com.au	+61 7 5503 0552
China	Pomic Ltd.	James Cai	James.cai@pomicltd.com	+1 (360) 915-7806
China (ACCBs only)	Shanghai Jin Feng Electronics & Inst Co	Wang Min-Gang	yonghuqian@vip.sina.com	+86-21-62712648
India	Hical Technologies	VB Venkatesh	venkatesh.vb@hical.com	+91 98450-12341
Indonesia	Precision Technologies	Aaron Lim	aaronlim@pretech.com.sg	+65 (62) 73 45 73 x125
Japan	Intertek Industries	Masa Ikeda	masai@intertekindustries.com	+1 (310) 309-9661
Korea	Aero Sensors Corp.	Jonathan Jo	jangcho@aerosensors.co.kr	+82 2 557 5355
Malaysia	Precision Technologies	Aaron Lim	aaronlim@pretech.com.sg	+65 (62) 73 45 73 x125
New Zealand	AeroDefense	Trent Ralph	trent@aerodefence.com.au	+61 7 5503 0552
Singapore	Precision Technologies	Aaron Lim	aaronlim@pretech.com.sg	+65 (62) 73 45 73 x125
Taiwan	Sensata Technologies	Bob Jacques	bjacques@sensata.com	+1 (805) 716-0586

Sensata Technologies, Inc. ("Sensata") data sheets are solely intended to assist designers ("Buyers") who are developing systems that incorporate Sensata products (also referred to herein as "components"). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, evaluation and judgment in designing Buyer's systems and products. Sensata data sheets have been created using standard laboratory conditions and engineering practices. Sensata has not conducted any testing other than that specifically described in the published documentation for a particular data sheet. Sensata may make corrections, enhancements, improvements and other changes to its data sheets or components without notice.

Buyers are authorized to use Sensata data sheets with the Sensata component(s) identified in each particular data sheet. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER SENSATA INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN. SENSATA DATA SHEETS ARE PROVIDED "AS IS". SENSATA MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE DATA SHEETS OR USE OF THE DATA SHEETS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. SENSATA DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO SENSATA DATA SHEETS OR USE THEREOF.

All products are sold subject to Sensata's terms and conditions of sale supplied at www.sensata.com. SENSATA ASSUMES NO LIABILITY FOR APPLICATIONS ASSISTANCE OR THE DESIGN OF BUYERS' PRODUCTS. BUYER ACKNOWLEDGES AND AGREES THAT IT IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL LEGAL, REGULATORY AND SAFETY-RELATED REQUIREMENTS CONCERNING ITS PRODUCTS, AND ANY USE OF SENSATA COMPONENTS IN ITS APPLICATIONS, NOTWITHSTANDING ANY APPLICATIONS-RELATED INFORMATION OR SUPPORT THAT MAY BE PROVIDED BY SENSATA.

Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA.