



| 5BT SERIES

-65°F to 400°F, SPDT, Welded, Hermetically Sealed 1/2"

Introduction

The Klixon® 5BT series thermostat is a high reliability, hermetically sealed thermal switch. The single pole, double throw design allows versatility and economy in providing two functions within the same device. Typically these Klixon® switches are used to control and indicate at a preset temperature. One pole can control a cooling fan and the other pole can indicate impending danger.

The 5BT thermostat is the ideal choice where quality and reliability in a double throw device are critical. Customer applications for KLIXON® 5BT thermostats include aerospace blower motors and heaters.



Features

- Single pole, double throw (SPDT)
- Hermetically sealed
- Vacuum baked and back-filled with nitrogen
- High resistance to shock and vibration
- Preset, non-adjustable calibration
- Qualified to MIL-PRF-24236 /24



PERFORMANCE CHARACTERISTICS

Contact Ratings (Resistive) Based on standard differential

30 VAC/DC / 125 VAC	Life Cycles
2.0 Amps	100,000 cycles
3.0 Amps	50,000 cycles

Characteristics

Switch Action	SPDT (snap-action)
Contact Resistance	0.050 ohms maximum per MIL-STD-202, Method 307
Dielectric Strength	1250 VAC, rms, 60 cycles for 1 minute, terminal to case per MIL-STD-202, Method 301
Insulation Resistance	100 megohms min. at 500 VDC
Vibration Resistance	10-2000 Hz, 10G, per MIL-STD-202, Method 204, Condition D
Shock Resistance	60G, 11 milliseconds, per MIL-STD-202, Method 213
Acceleration	60G
Hermeticity	1 X 10 ⁻⁸ atm cc/second maximum per MIL-STD-202, Method 112, Condition C

Characteristics (continued)

Salt Spray Resistance	Per MIL-STD-202, Method 101, Condition B, 5% solution
Humidity	MIL-STD-202, Method 103, Condition A
Sand and Dust	MIL-STD-202, Method 110, Condition A
Weight (average)	Basic Unit: 6.0 grams With bracket: 7.0 grams
Ambient Temperature Range	-65°F to 450°F, (-53.9°C to +232.2°C) <i>Maximum ambient exposure while in the closed position is 200°F above contact closing temperature.</i>
Operating Temperature Range	-65°F to 400°F, (-53.9°C to +204.4°C)

Operating Temperature

Operating Temperature		Differential		Tolerance	
°F	°C	°F	°C	±°F	±°C
-65	-53.9	30	16.7	10	5.6
-40	-40.0	30	16.7	10	5.6
-15	-26.1	30	16.7	10	5.6
0	-17.8	20	11.1	8	4.4
10	-12.2	20	11.1	8	4.4
20	-6.7	20	11.1	8	4.4
30	-1.1	20	11.1	8	4.4
40	4.4	20	11.1	8	4.4
Operating Temperature		Differential		Tolerance	
°F	°C	°F	°C	±°F	±°C
50	10.0	20	11.1	8	4.4
60	15.6	20	11.1	8	4.4
70	21.1	20	11.1	8	4.4
80	26.7	20	11.1	8	4.4
90	32.2	20	11.1	8	4.4
100	37.8	20	11.1	8	4.4
110	43.3	20	11.1	8	4.4
120	48.9	20	11.1	8	4.4
Operating Temperature		Differential		Tolerance	
°F	°C	°F	°C	±°F	±°C
130	54.4	20	11.1	8	4.4
140	60.0	20	11.1	8	4.4
150	65.6	20	11.1	8	4.4
160	71.1	20	11.1	8	4.4
170	76.7	20	11.1	8	4.4
180	82.2	20	11.1	8	4.4
190	87.8	20	11.1	8	4.4
200	93.3	20	11.1	8	4.4

Operating Temperature (continued)

Operating Temperature		Differential		Tolerance	
°F	°C	°F	°C	±°F	±°C
210	98.9	20	11.1	8	4.4
220	104.4	20	11.1	8	4.4
230	110.0	20	11.1	8	4.4
240	115.6	20	11.1	8	4.4
250	121.1	20	11.1	8	4.4
260	126.7	20	11.1	8	4.4
270	132.2	20	11.1	8	4.4
280	137.8	20	11.1	8	4.4
Operating Temperature		Differential		Tolerance	
°F	°C	°F	°C	±°F	±°C
290	143.3	20	11.1	8	4.4
300	148.9	20	11.1	8	4.4
310	154.4	25	13.9	10	5.6
320	160.0	25	13.9	10	5.6
330	165.6	25	13.9	10	5.6
340	171.1	25	13.9	10	5.6
350	176.7	25	13.9	10	5.6
375	190.6	35	19.4	12	6.7
400	204.4	35	19.4	12	6.7

CONFIGURATIONS

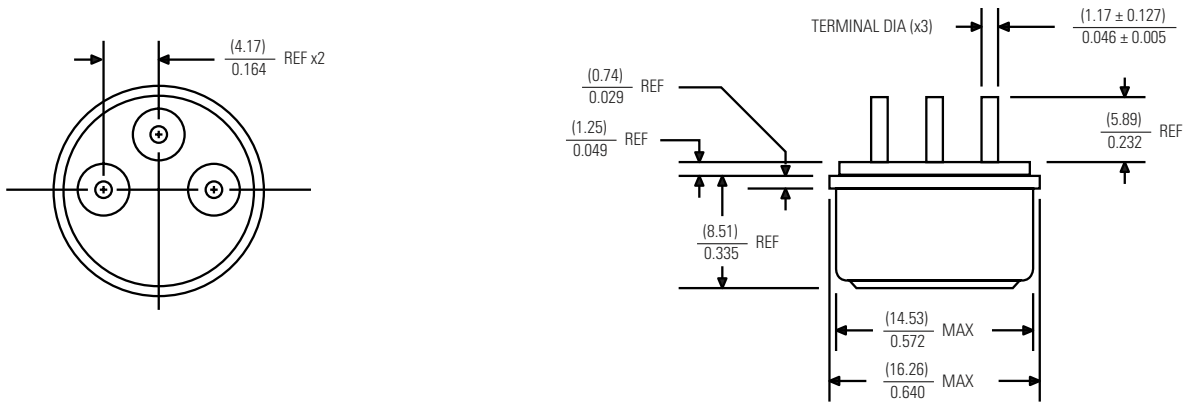
The switches are offered in several versions. Our most common configurations are depicted below, but many other styles are available.

Configuration Options

Terminals	Flattened and Pierced (Flattened and pierced terminals can also be bent at right angles to reduce the overall height.)
	Pin-type (Leads can be welded to pin-type terminals to form an integral unit.)
Wire Leads	Standard 18 gauge, stranded wire leads are available in white or black Teflon insulation, in accordance with MIL-W-22759/11 (Teflon is a Trademark of E. I. Dupont de Namers and Co.)
	Other wires are available upon request. (Wire leads are not available for all styles.)
Finish	The standard plating is copper–nickel, but several other finishes are available.
Mounting Flanges	Top or bottom mounting flanges are available.
Custom Designs	The 5BT device can be custom designed, such as packaging it into a probe thermostat.

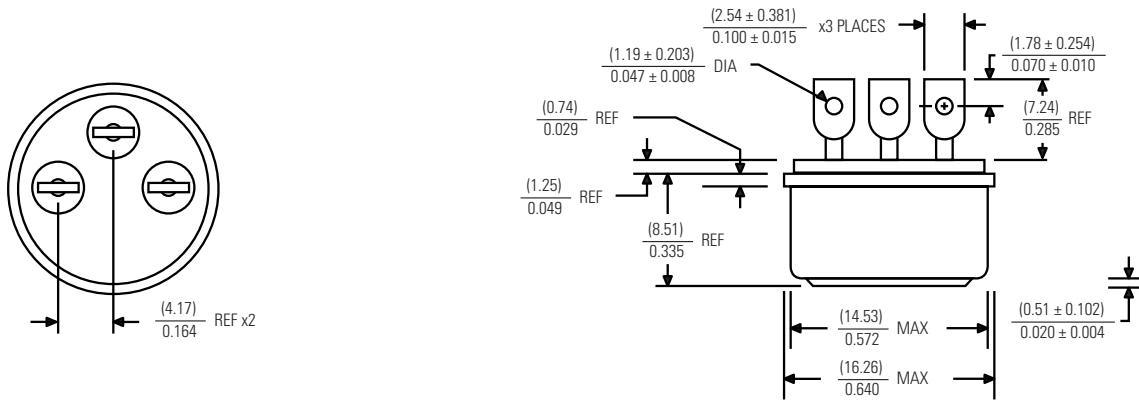
5BT-2

Pin Type Terminals | SPDT (Single Pole, Double Throw) | Conforms to MIL-S-24236/24



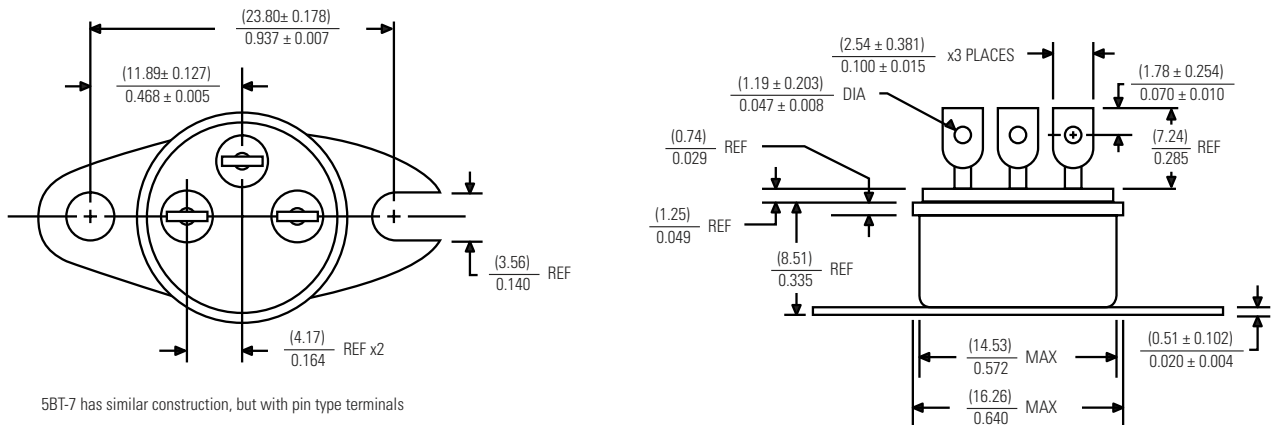
5BT-4

Flattened Pierced Terminals | SPDT (Single Pole, Double Throw) | Conforms to MIL-S-24236/24



5BT-5

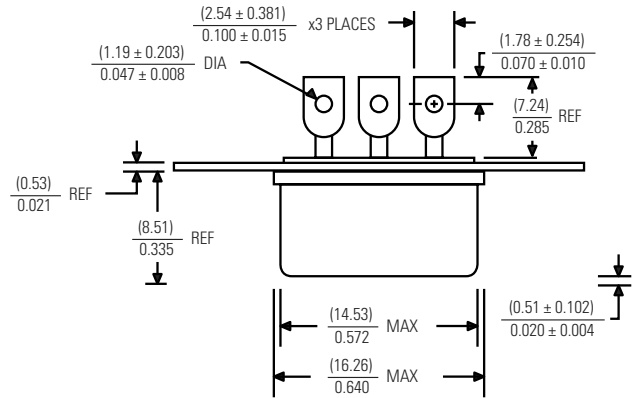
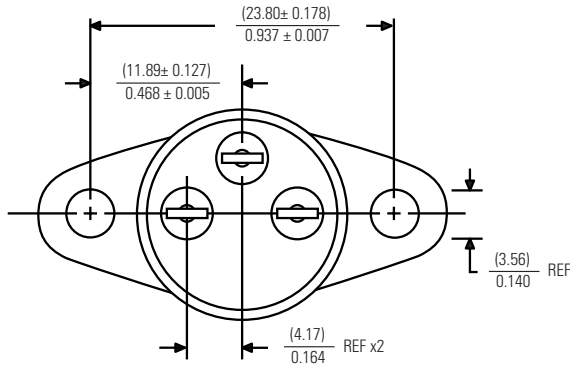
Surface Mount Bracket | SPDT (Single Pole, Double Throw) | Conforms to MIL-S-24236/24



5BT-7 has similar construction, but with pin type terminals

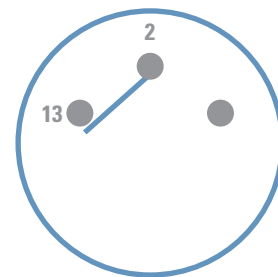
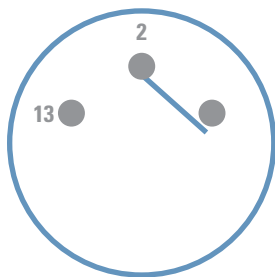
5BT-6

Top Mounting Bracket | SPDT (Single Pole, Double Throw) | Conforms to MIL-S-24236/24



Low Temperature Contact Position

High Temperature Contact Position



Terminals 1 & 2 are opened and terminals 2 & 3 are closed at the low temperature settings

Terminals 1 & 2 are closed and terminals 2 & 3 are open at the high temperature settings

 WARNINGS



RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE

- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

Failure to follow these instructions can result in serious injury, or equipment damage.



HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Disconnect all power before installing or working with this equipment
- Verify all connections and replace all covers before turning on power

Failure to follow these instructions will result in death or serious injury.

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.