

Klixon® 3BT and 4BT Series Thermostats

0°F to 350°F, Tiny Stat™ Precision Thermostats

- Smallest snap-acting thermal switches ever made
- Extremely fast response
- Single pole, single throw (SPST)
- Normally open or closed
- Preset, non-adjustable calibration
- Hermetically sealed and back-filled with nitrogen
- Gold plated
- Various mounting configurations available
- Qualified to MIL-PRF-24236/13 (4BT) and MIL-PRF-24236/19 (3BT)
- Qualified to NASA S-311-641/06 (4BT) and NASA S-311-641/07 (3BT)

Klixon Tiny Stats combine an impressive list of superlatives in a reliable, hermetically sealed, snap-acting Klixon design. They are the smallest envelope size ever developed — ideal for remote sensing applications in locations with severe space limitations. They are the lightest construction available — perfect for applications where weight is an important consideration. They have an extremely fast response in order to permit early warning of overheat conditions. The low mass internal components allow Tiny Stat precision thermostats to meet the most demanding shock and vibration standards of MIL-PRF-24236.

For more information, see the [page of free drawings available for download](#).

Performance

Gold plated contacts can be furnished to assure reliable circuit switching under low wattage conditions. (*See second table below.*) Gold plated contacts are not suitable for higher loads.

Contact Ratings (Resistive) Based on standard differential			
115 VAC / 30 VDC	30 mVAC*	30 mVDC*	Life Cycles
1.0 Amp	0.01 Amp	0.01 Amp	10,000 cycles
* Specify gold contacts.			

Gold Contact Ratings (Resistive)	
30 VAC/DC	500 mA and below
115 VAC	200 mA and below

Characteristics	
Switch Action	SPST (snap-action)



Qualifications

Military Specifications:

- 3BT: MIL-PRF-24236/19
- 4BT: MIL-PRF-24236/13

NASA Specifications:

- 3BT: S-311-641/07
- 4BT: S-311-641/06

Contact Resistance	0.050 ohms maximum (0.100 ohms maximum for close on rise devices with setpoints greater than 175°F) per MIL-STD-202, Method 307
Dielectric Strength	500 vac, RMS, 60 Hz for 5 seconds, across open contacts, per MIL-STD-202, Method 301
Vibration Resistance	5–2000 Hz, 30 G, per MIL-STD-202, Method 204 <i>Vibration resistance specification does not apply to devices that open on temperature rise while at temperatures of 75°F or more below the opening temperature or to devices that close on temperature rise while at temperatures of 75°F or more above the closing temperature.</i>
Shock Resistance	100 G, 6 milliseconds per MIL-STD-202, Method 213
Hermeticity	1 x 10 ⁻⁸ atm cc/sec. maximum, per MIL-STD-202, Method 112, Condition C
Salt Spray Resistance	Per MIL-STD-202, Method 101, Condition B, 5% solution
Weight	Basic Unit: 0.2 to 0.9 grams
Ambient Temperature Range	-80°F to 350°F (-62.2°C to 176.7°C)

Dash	Operating Temperature		Differential		Tolerance	
	#	°F	°C	°F	°C	
	1	0	-17.8	30	16.7	8 4.4
	2	5	-15.0	30	16.7	8 4.4
	3	10	-12.2	30	16.7	8 4.4
	4	15	-9.4	30	16.7	8 4.4
	5	20	-6.7	30	16.7	8 4.4
	6	25	-3.9	30	16.7	8 4.4
	7	30	-1.1	30	16.7	8 4.4
	8	35	1.7	30	16.7	8 4.4
Dash	Operat. Temp.		Differential		Tolerance	
#	°F	°C	°F	°C	± °F	± °C
9	40	4.4	30	16.7	8	4.4

10	45	7.2	30	16.7	8	4.4
11	50	10.0	30	16.7	8	4.4
12	55	12.8	30	16.7	8	4.4
13	60	15.6	30	16.7	8	4.4
14	65	18.3	30	16.7	8	4.4
15	70	21.1	30	16.7	8	4.4
16	75	23.9	30	16.7	8	4.4
Dash	Operat. Temp.		Differential		Tolerance	
#	°F	°C	°F	°C	± °F	± °C
17	80	26.7	30	16.7	8	4.4
18	85	29.4	30	16.7	8	4.4
19	90	32.2	30	16.7	8	4.4
20	95	35.0	30	16.7	8	4.4
21	100	37.8	30	16.7	8	4.4
22	105	40.6	30	16.7	8	4.4
23	110	43.3	30	16.7	8	4.4
24	115	46.1	30	16.7	8	4.4
Dash	Operat. Temp.		Differential		Tolerance	
#	°F	°C	°F	°C	± °F	± °C
25	120	48.9	30	16.7	8	4.4
26	125	51.7	30	16.7	8	4.4
27	130	54.4	30	16.7	8	4.4
28	135	57.2	30	16.7	8	4.4
29	140	60.0	30	16.7	8	4.4
30	145	62.8	30	16.7	8	4.4
31	150	65.6	30	16.7	8	4.4
32	155	68.3	30	16.7	8	4.4
Dash	Operat. Temp.		Differential		Tolerance	
#	°F	°C	°F	°C	± °F	± °C

33	160	71.1	30	16.7	8	4.4
34	165	73.9	30	16.7	8	4.4
35	170	76.7	30	16.7	8	4.4
36	175	79.4	30	16.7	8	4.4
37	180	82.2	30	16.7	8	4.4
38	185	85.0	30	16.7	8	4.4
39	190	87.8	30	16.7	8	4.4
40	195	90.6	30	16.7	8	4.4
Dash	Operat. Temp.		Differential		Tolerance	
#	°F	°C	°F	°C	± °F	± °C
41	200	93.3	30	16.7	8	4.4
42	205	96.1	30	16.7	8	4.4
43	210	98.9	30	16.7	8	4.4
44	215	101.7	30	16.7	8	4.4
45	220	104.4	30	16.7	8	4.4
46	225	107.2	30	16.7	8	4.4
47	230	110.0	30	16.7	8	4.4
48	235	112.8	30	16.7	8	4.4
Dash	Operat. Temp.		Differential		Tolerance	
#	°F	°C	°F	°C	± °F	± °C
49	240	115.6	30	16.7	8	4.4
50	245	118.3	30	16.7	8	4.4
51	250	121.1	30	16.7	8	4.4
52	255	123.9	30	16.7	8	4.4
53	260	126.7	30	16.7	8	4.4
54	265	129.4	30	16.7	8	4.4
55	270	132.2	30	16.7	8	4.4
56	275	135.0	30	16.7	8	4.4
Dash	Operat. Temp.		Differential		Tolerance	

#	°F	°C	°F	°C	± °F	± °C
57	280	137.8	30	16.7	8	4.4
58	285	140.6	30	16.7	8	4.4
59	290	143.3	30	16.7	8	4.4
60	295	146.1	30	16.7	8	4.4
61	300	148.9	30	16.7	8	4.4
62	305	151.7	30	16.7	8	4.4
63	310	154.4	30	16.7	8	4.4
64	315	157.2	30	16.7	8	4.4
Dash	Operat. Temp.		Differential		Tolerance	
#	°F	°C	°F	°C	± °F	± °C
65	320	160.0	30	16.7	8	4.4
66	325	162.8	30	16.7	8	4.4
67	330	165.6	30	16.7	8	4.4
68	335	168.3	30	16.7	8	4.4
69	340	171.1	30	16.7	8	4.4
70	345	173.9	30	16.7	8	4.4
71	350	176.7	30	16.7	8	4.4
Consult Sensata Technologies if desired operating temperature does not appear on table.						

Configurations

Configuration Options - <i>Custom configurations are available</i>	
Pin-Type Terminals	for quick assembly to printed circuit boards (3BT-2 and 3BT-15)
Threaded Plug	For surface temperature sensing (3BT-3)
Insulated Version	For applications where grounded case construction is not suitable (3BT-6)
Low Profile	For applications where an extremely low profile is critical (4BT-2)
Other	Other styles are available

For more information, see the [page of free drawings available for download](#), [contact us](#), [contact a distributor](#), or [make an](#)

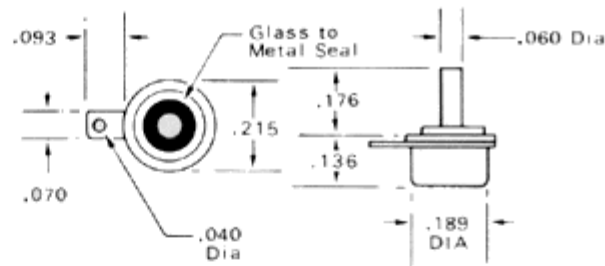
[online request for additional information.](#)

Our most common configurations are shown below, but other styles are available:

3BT-2



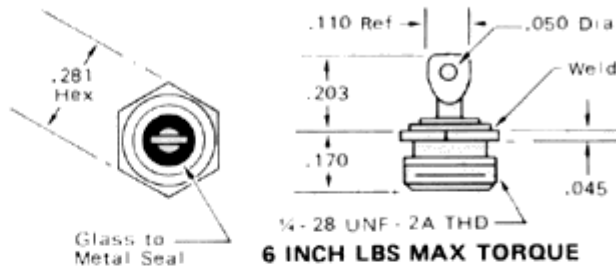
Grounded case construction
Approx. wt. 0.4 grams
Conforms to MIL-S-24236/19
configuration 1



3BT-3



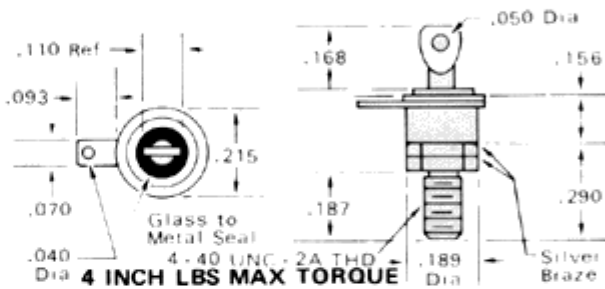
Grounded case construction
Approx. wt. 0.9 grams
Conforms to MIL-S-24236/19
configuration 2



3BT-6



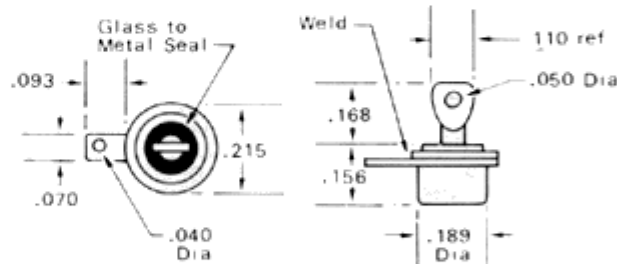
Case insulated
Approx. wt. 0.9 grams
Conforms to MIL-S-24236/19
configuration 3



3BT-8



Grounded case construction
Approx. wt. 0.4 grams
Conforms to MIL-S-24236/19
configuration 4

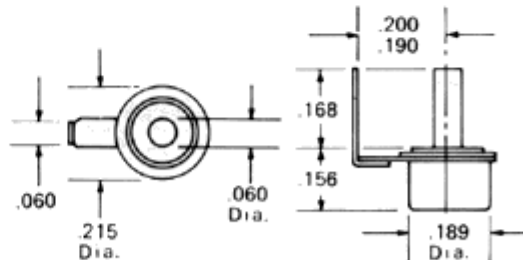


3BT-15



Printed circuit board mount
Approx. wt. 0.4 grams
Conforms to MIL-S-24236/19
configuration 5

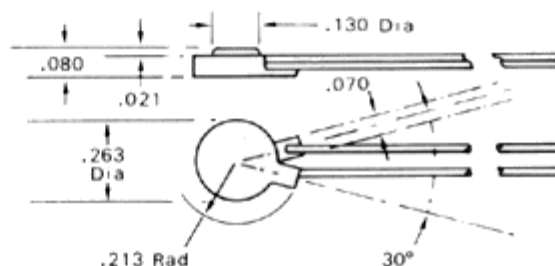
Actual size



4BT-2



Grounded case construction
Approx. wt. 0.2 grams
Conforms to MIL-S-24236/13



Part Numbering System

A breakdown of our part numbering system for standard 3BT and 4BT thermostats is shown below. You may need to contact Sensata Technologies for the style code.

