

KLIXON | 3BT / 4BT Series

Tiny Stat™ Hermetic Thermostats, 0°F to 350°F, SPST

FEATURES

- Smallest snap-acting thermal switches on the market today
- Single Pole / Single Throw (SPST)
- Preset temperature set points, non-adjustable calibration
- Hermetically sealed and back-filled with nitrogen
- Various mounting configurations available
- Qualified to MIL-PRF-24236/13 (4BT) and MIL-PRF-24236/19 (3BT)

INTRODUCTION

The Klixon® Tiny Stat™ 3BT and 4BT series combine an impressive list of superlatives in a reliable, hermetically sealed, snap-acting design. The 3BT and 4BT series are the smallest envelope size ever developed, ideal for remote sensing applications in locations with severe space limitations. The 3BT and 4BT are the lightest construction available on the market today, and are perfect for applications where weight is an important consideration. All Klixon Tiny Stats have an extremely fast response in order to permit early warning of overheat conditions. Their low mass internal components allow Tiny Stat precision thermostats to meet the most demanding shock and vibration standards of MIL-PRF-24236. Gold plated contacts can be furnished when low wattage conditions exist that requires reliable circuit switching.

Applications include electronics overheat protection, transformer windings and medical equipment.

SPECIFICATIONS

Contact Ratings	Cycles	Voltage	Amps (resistive)
	10,000	115VAC / 30 VDC	1.00 (silver contacts)
	10,000	30 VAC / VDC	0.10 (silver contacts)
	10,000	30VAC / VDC	500 mA and below (gold contacts)
	10,000	115VAC	200 mA and below (gold contacts)
Contact Operations	Either close on rise or open on rise , SPST (Single Pole, Single Throw)		
Operating Temperature	+0°F to 350°F (-17.8°C to 176.7°C)		
Dielectric Strength	500 VAC, rms, 60 cycles for 1 minute, across open contacts, per MIL-STD-202, Method 301		
Contact Resistance	0.050 ohms maximum (0.100 ohms maximum for close on rise devices with set points greater than 175°F), per MIL-STD-202, Method 307		
Vibration	5–2000 Hz, 30 G, per MIL-STD-202, Method 204 <i>Devices which open on rise should not be subjected to vibration while at temperature of 75°F or more below the opening temperature. Devices that close on rise should not be subjected to vibration while at temperatures of 75°F or more above the closing temperature.</i>		
Shock	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	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)		

STANDARD TEMPERATURE SETTINGS – STD. TOLERANCE OF $\pm 8^{\circ}\text{F}$ (4.4°C)

CODE	OPERATING TEMPERATURE		DIFFERENTIAL		CODE	OPERATING TEMPERATURE		DIFFERENTIAL		CODE	OPERATING TEMPERATURE		DIFFERENTIAL	
	$^{\circ}\text{F}$	$^{\circ}\text{C}$	$^{\circ}\text{F}$	$^{\circ}\text{C}$		$^{\circ}\text{F}$	$^{\circ}\text{C}$	$^{\circ}\text{F}$	$^{\circ}\text{C}$		$^{\circ}\text{F}$	$^{\circ}\text{C}$	$^{\circ}\text{F}$	$^{\circ}\text{C}$
1	0	-17.8	30	16.7	25	120	48.9	30	16.7	49	240	115.6	30	16.7
2	5	-15.0	30	16.7	26	125	51.7	30	16.7	50	245	118.3	30	16.7
3	10	-12.2	30	16.7	27	130	54.4	30	16.7	51	250	121.1	30	16.7
4	15	-9.4	30	16.7	28	135	57.2	30	16.7	52	255	123.9	30	16.7
5	20	-6.7	30	16.7	29	140	60.0	30	16.7	53	260	126.7	30	16.7
6	25	-3.9	30	16.7	30	145	62.8	30	16.7	54	265	129.4	30	16.7
7	30	-1.1	30	16.7	31	150	65.6	30	16.7	55	270	132.2	30	16.7
8	35	1.7	30	16.7	32	155	68.3	30	16.7	56	275	135.0	30	16.7
9	40	4.4	30	16.7	33	160	71.1	30	16.7	57	280	137.8	30	16.7
10	45	7.2	30	16.7	34	165	73.9	30	16.7	58	285	140.6	30	16.7
11	50	10.0	30	16.7	35	170	76.7	30	16.7	59	290	143.3	30	16.7
12	55	12.8	30	16.7	36	175	79.4	30	16.7	60	295	146.1	30	16.7
13	60	15.6	30	16.7	37	180	82.2	30	16.7	61	300	148.9	30	16.7
14	65	18.3	30	16.7	38	185	85.0	30	16.7	62	305	151.7	30	16.7
15	70	21.1	30	16.7	39	190	87.8	30	16.7	63	310	154.4	30	16.7
16	75	23.9	30	16.7	40	195	90.6	30	16.7	64	315	157.2	30	16.7
17	80	26.7	30	16.7	41	200	93.3	30	16.7	65	320	160.0	30	16.7
18	85	29.4	30	16.7	42	205	96.1	30	16.7	66	325	162.8	30	16.7
19	90	32.2	30	16.7	43	210	98.9	30	16.7	67	330	165.6	30	16.7
20	95	35.0	30	16.7	44	215	101.7	30	16.7	68	335	168.3	30	16.7
21	100	37.8	30	16.7	45	220	104.4	30	16.7	69	340	171.1	30	16.7
22	105	40.6	30	16.7	46	225	107.2	30	16.7	70	345	173.9	30	16.7
23	110	43.3	30	16.7	47	230	110.0	30	16.7	71	350	176.7	30	16.7
24	115	46.1	30	16.7	48	235	112.8	30	16.7	<i>Consult factory for additional temperatures</i>				

STANDARD CONFIGURATIONS

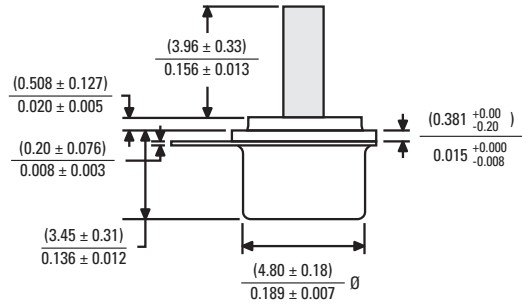
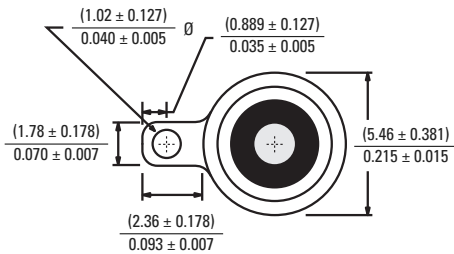
3BT-2

Grounded Case Construction

Approx. wt. 0.4 grams

Conforms to MIL-PRF-24236/19

Config 1



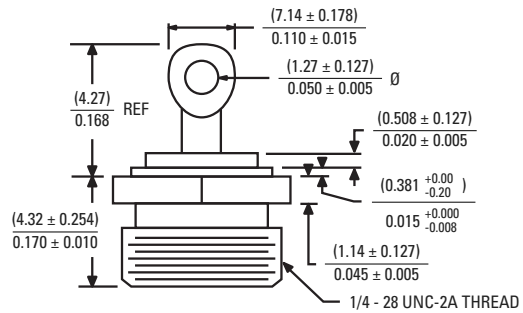
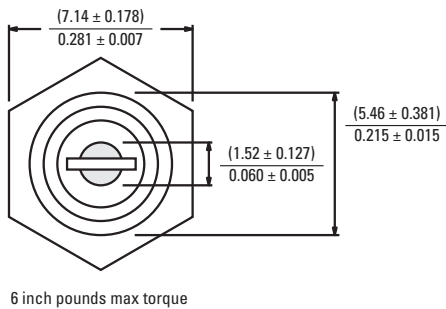
3BT-3

Grounded Case Construction

Approx. wt. 0.9 grams

Conforms to MIL-PRF-24236/19

Config 3



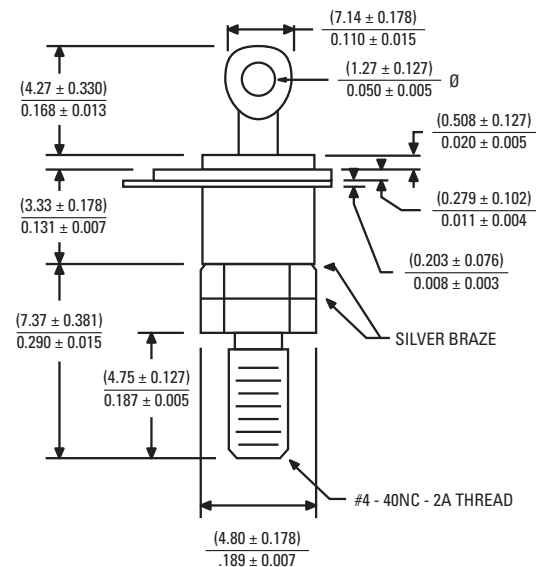
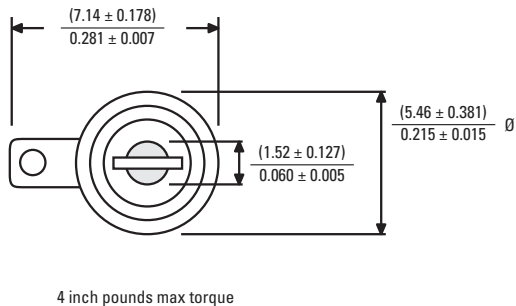
3BT-6

Insulated Case Construction

Approx. wt. 0.9 grams

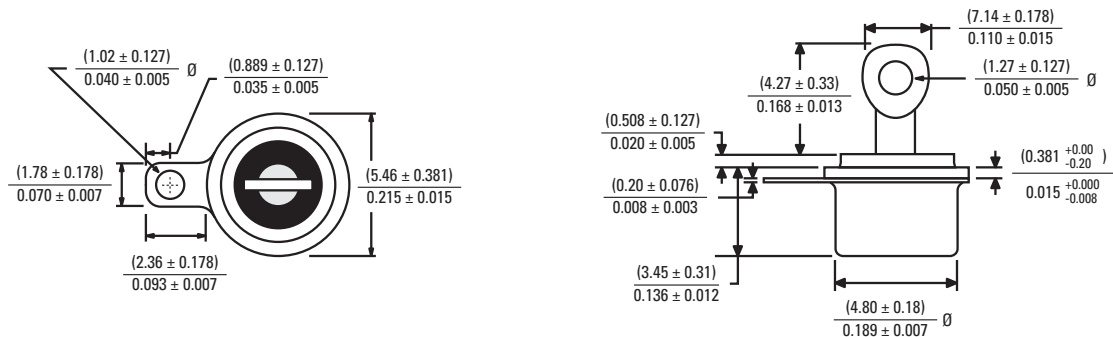
Conforms to MIL-PRF-24236/19

Config 3

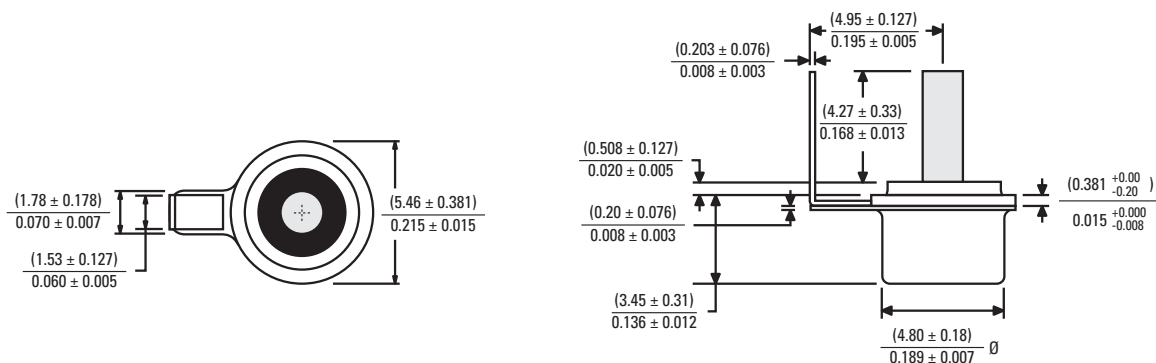


STANDARD CONFIGURATIONS

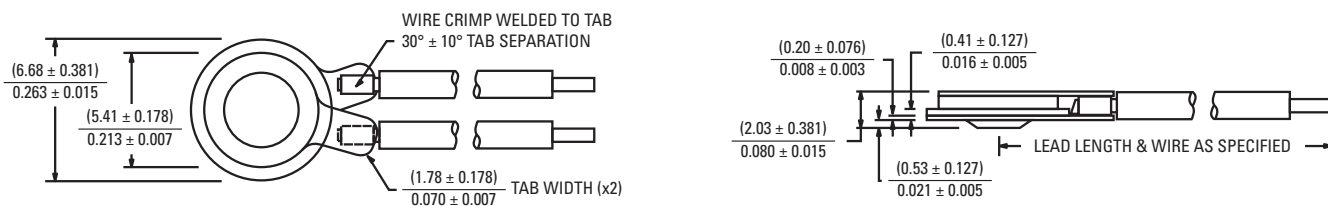
3BT-8 Grounded Case Construction | Approx. wt. 0.4 grams | Conforms to MIL-PRF-24236/19 | Config 4



3BT-15 PC Board Mount | Approx. wt. 0.4 grams | Conforms to MIL-PRF-24236/19 | Config 5

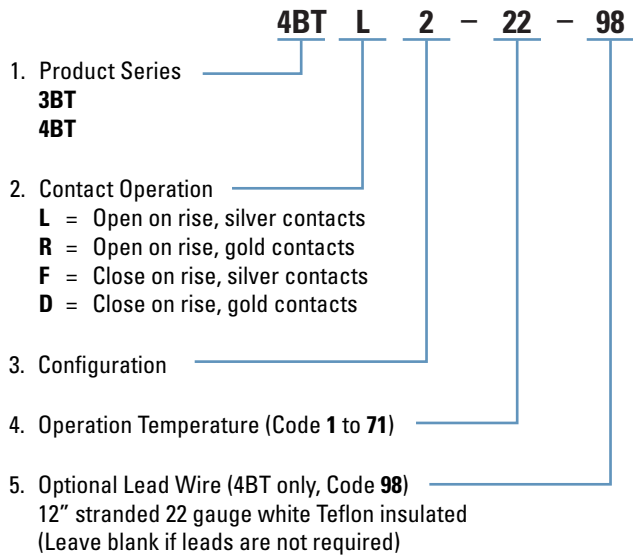


4BT-2 Grounded Case Construction | Approx. wt. 0.9 grams | Conforms to MIL-PRF-24236/19 | Config 1



Additional configurations available, contact Sensata Technologies for more information. All dimensions are nominal, (millimeters) / inches.

STANDARD PART NUMBER BUILDER



The example to the left is a 4BT-2 configuration, open on rise, silver contacts, open on rise at 105°F ± 8°F, close at 85°F ± 8°F with 12" wire leads

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