



Sensata
Technologies



KLIXON
®

PRECISION PRODUCTS
Thermal, Position, Pressure & Airflow



pg 4

KLIXON® Tiny Stat™ 3BT & 4BT Series Thermostats

General Description

- Tiny Stat™ precision thermostat
- Single pole, single throw (SPST)
- Hermetically sealed and back-filled with nitrogen
- Gold-plated contacts available upon request

Operating Switch Range

- -18°C to 177°C (0°F to 350°F)

Max Current and Voltage Rating

- 1 amp at 115VAC & 30VDC for 10,000 life cycles
- 0.01 amp at 30mVAC & 30mVDC (gold contacts, min amps) for 10,000 life cycles

Approvals

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



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KLIXON® 5BT Series Hermetic Thermostats

General Description

- ½" bimetal disc thermostat, hermetically sealed
- Single pole, double throw (SPDT)
- High resistance to shock and vibration

Operating Switch Range

- -54°C to 204°C (-65°F to 400°F)

Max Current and Voltage Rating

- 2 amp at 125VAC & 30VDC for 100,000 cycles
- 3 amp at 125VAC & 30VDC for 50,000 cycles

Approvals

- MIL-PRF-24236 /24



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KLIXON® M1, 11041 Series Hermetic Thermostats

General Description

- ½" bimetal disc thermostat, hermetically sealed
- Single pole, single throw (SPST)
- High resistance to shock and vibration

Operating Switch Range

- -54°C to 288°C (-65°F to 550°F)

Max Current and Voltage Rating

- 5 amp at 30VAC & 30VDC at 100,000 cycles
- 6 amp at 125VAC at 5,000 cycles
- Other amperages, voltage, cycles are available

Approvals

- MIL-PRF-24236/1



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KLIXON® M2 Series Hermetic Thermostats

General Description

- ½" bimetal disc thermostat, hermetically sealed
- Single pole, single throw (SPST)
- Low profile, tight tolerance, narrow differentials

Operating Switch Range

- -18°C to 149°C (0°F to 300°F)

Max Current and Voltage Rating

- 2 amp at 120VAC & 30VDC at 250,000 cycles

Approvals

- MIL-PRF-24236/20
- S-311-641



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KLIXON® 4344 Series Hermetic Thermostats

General Description

- ½" bimetal disc thermostat, hermetically sealed
- Single pole, single throw (SPST)
- Many option available, including switch packaged into probe and pipe strap mount options

Operating Switch Range

- -54°C to 288°C (-65°F to 550°F)

Max Current and Voltage Rating

- 7 amps, 30VAC/VDC at 5,000 cycles
- 3 amps, 125VAC at 50,000 cycles
- Other amperages, voltage, cycles are available

Approvals

- CUL recognized (#34618)



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KLIXON® 4391 Series Hermetic Thermostats

General Description

- ½" bimetal disc thermostat, hermetically sealed
- Single pole, single or double throw (SPST/SPDT)
- Many option available, including optional overmold

Operating Switch Range

- -18°C to 232°C (0°F to 450°F)

Max Current and Voltage Rating

- 14 amps, 30VAC/VDC at 5,000 cycles
- 6 amps, 125VAC at 50,000 cycles
- Other amperages, voltage, cycles are available





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KLIXON® 7BT2 Series Thermostats

General Description

- Environmentally sealed, high capacity, ½" bimetal disc
- SPST, normally open or closed

Operating Switch Range

- -1°C to 204°C (30°F to 400°F)

Max Current and Voltage Rating

- 10 amps, 120VAC / 240VAC up to 100,000 cycles
- 7 amps, 277VAC up to 100,000 cycles

Approvals

- UL & CUL recognized (#34618)



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KLIXON® 6786 Series Thermostats

General Description

- Environmentally sealed, low-profile, ½" bimetal disc
- SPST, normally open or closed

Operating Switch Range

- -29°C to 177°C (-20°F to 350°F)

Max Current and Voltage Rating

- 7 amps, 30VAC/VDC at 5,000 cycles
- 3 amps, 125VAC at 50,000 cycles

Approvals

- UL & CUL recognized (#34618)



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KLIXON® Thermostat Probe Packages

General Description

- Extreme temperature probes (up to 550°F), fast response probes and narrow differential probes (2°F to 8°F reset differential) are available

Operating Switch Range

- Extreme temperature: -54°C to 288°C (-65°F to 550°F)
- Fast response: -18°C to 177°C (0°F to 350°F)
- Narrow differential: -18°C to 135°C (0°F to 275°F)

Max Current and Voltage Rating

- Extreme temperature: Up to 7 amps, various voltages
- Fast response: Up to 1 amp at 115VAC & 30VDC
- Narrow differential: Up to 2 amp at 125VAC & 30VDC

Approvals

- Extreme temperature, 28303 series only: UL / CUL recognized (#E34618)



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KLIXON® AT/KX Series Limit Switches

General Description

- Compact, hermetically sealed limit switches
- Available options include various actuators, mounting brackets, terminations and body styles

Operating Switch Range

- -54°C to 135°C (-65°F to 275°F)

Max Current and Voltage Rating

- AT Series: Up to 4 amps (resistive)
- KX Series: Up to 10 amps (resistive)

Approvals

- Extreme temperature, 28303 series only: UL / CUL recognized (#E34618)



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KLIXON® 2SE Series Airflow Sensors

General Description

- Solid-state airflow sensors designed to recognize loss or reduction of airflow in power supplies, data processing units, electronic equipment
- SPST or SPDT, normally open or closed

Operating Temperature Range

- 10°C to 50°C (50°F to 122°F)

Max Current and Voltage Rating

- 0.40 amp at 30VDC

Approvals

- Military
- Aerospace
- Commercial



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KLIXON® ACMP Series Aircraft Motor Protectors

General Description

- Single & three-phase protection
- Locked rotor protection
- Neutral tap

Max Current and Voltage Rating

- 28VDC / 120VAC, from 16 amps up to 120 amps



pg 36

KLIXON® 6PS Pressure Switches

General Description

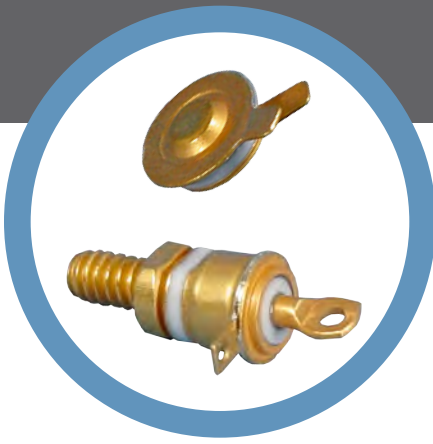
- Hermetic stainless steel construction
- Snap action, standard & custom configurations

Operating Switch Range

- 45 to 700 PSIA

Max Current and Voltage Rating

- 5 amps, 28VDC at 50,000 cycles, resistive
- 2 amps, 28VDC at 50,000 cycles, inductive



KLIXON® | 3BT / 4BT Series

Tiny Stat™ Hermetic Thermostats, -18°C to 177°C, 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	<i>Cycles</i>	<i>Voltage</i>	<i>Amps (resistive)</i>
	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	-18°C to 177°C (+0°F to 350°F)		
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	-62°C to 177°C (-80°F to 350°F)		

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

CODE	OPERATING TEMPERATURE		DIFFERENTIAL		CODE	OPERATING TEMPERATURE		DIFFERENTIAL		CODE	OPERATING TEMPERATURE		DIFFERENTIAL	
	$^{\circ}\text{C}$	$^{\circ}\text{F}$	$^{\circ}\text{C}$	$^{\circ}\text{F}$		$^{\circ}\text{C}$	$^{\circ}\text{F}$	$^{\circ}\text{C}$	$^{\circ}\text{F}$		$^{\circ}\text{C}$	$^{\circ}\text{F}$	$^{\circ}\text{C}$	$^{\circ}\text{F}$
1	-18	0	17	30	25	49	120	17	30	49	116	240	17	30
2	-15	5	17	30	26	52	125	17	30	50	118	245	17	30
3	-12	10	17	30	27	54	130	17	30	51	121	250	17	30
4	-9	15	17	30	28	57	135	17	30	52	124	255	17	30
5	-7	20	17	30	29	60	140	17	30	53	127	260	17	30
6	-4	25	17	30	30	63	145	17	30	54	129	265	17	30
7	-1	30	17	30	31	66	150	17	30	55	132	270	17	30
8	2	35	17	30	32	68	155	17	30	56	135	275	17	30
9	4	40	17	30	33	71	160	17	30	57	138	280	17	30
10	7	45	17	30	34	74	165	17	30	58	141	285	17	30
11	10	50	17	30	35	77	170	17	30	59	143	290	17	30
12	13	55	17	30	36	79	175	17	30	60	146	295	17	30
13	16	60	17	30	37	82	180	17	30	61	149	300	17	30
14	18	65	17	30	38	85	185	17	30	62	152	305	17	30
15	21	70	17	30	39	88	190	17	30	63	154	310	17	30
16	24	75	17	30	40	91	195	17	30	64	157	315	17	30
17	27	80	17	30	41	93	200	17	30	65	160	320	17	30
18	29	85	17	30	42	96	205	17	30	66	163	325	17	30
19	32	90	17	30	43	99	210	17	30	67	166	330	17	30
20	35	95	17	30	44	102	215	17	30	68	168	335	17	30
21	38	100	17	30	45	104	220	17	30	69	171	340	17	30
22	41	105	17	30	46	107	225	17	30	70	174	345	17	30
23	43	110	17	30	47	110	230	17	30	71	177	350	17	30
24	46	115	17	30	48	113	235	17	30	<i>Consult factory for additional temperatures</i>				

STANDARD CONFIGURATIONS

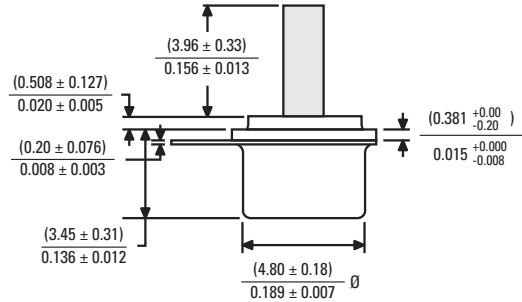
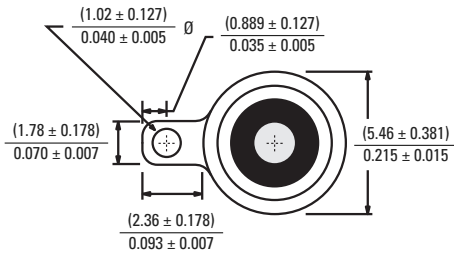
3BT-2

Grounded Case Construction

Approx. wt. 0.4 grams

Conforms to MIL-PRF-24236/19

Config 1



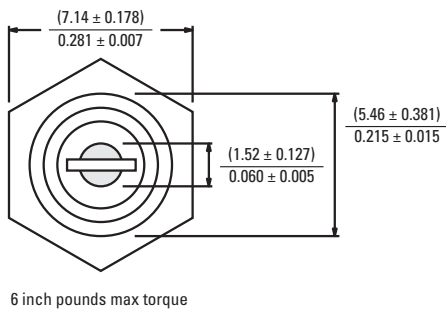
3BT-3

Grounded Case Construction

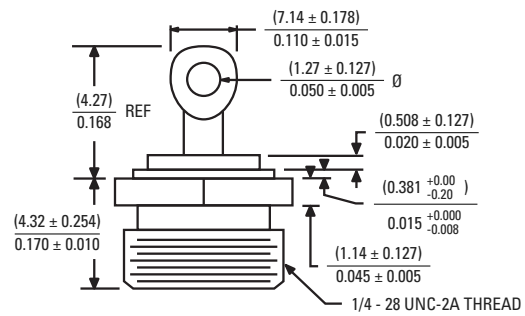
Approx. wt. 0.9 grams

Conforms to MIL-PRF-24236/19

Config 3



6 inch pounds max torque



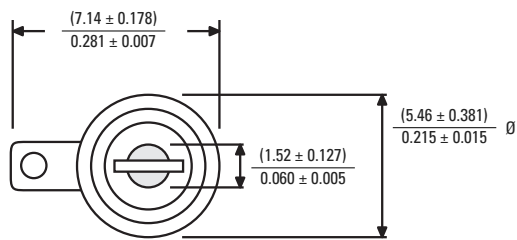
3BT-6

Insulated Case Construction

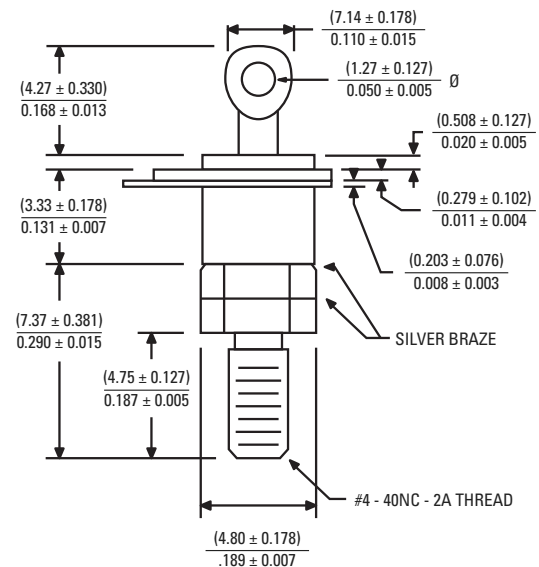
Approx. wt. 0.9 grams

Conforms to MIL-PRF-24236/19

Config 3

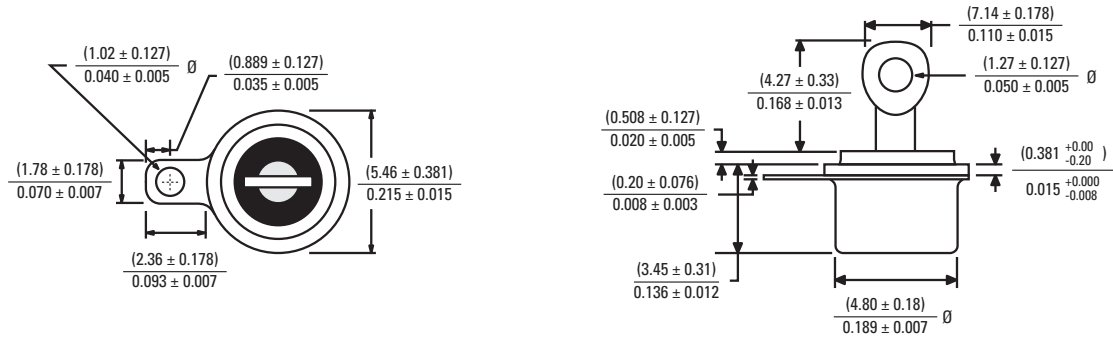


4 inch pounds max torque

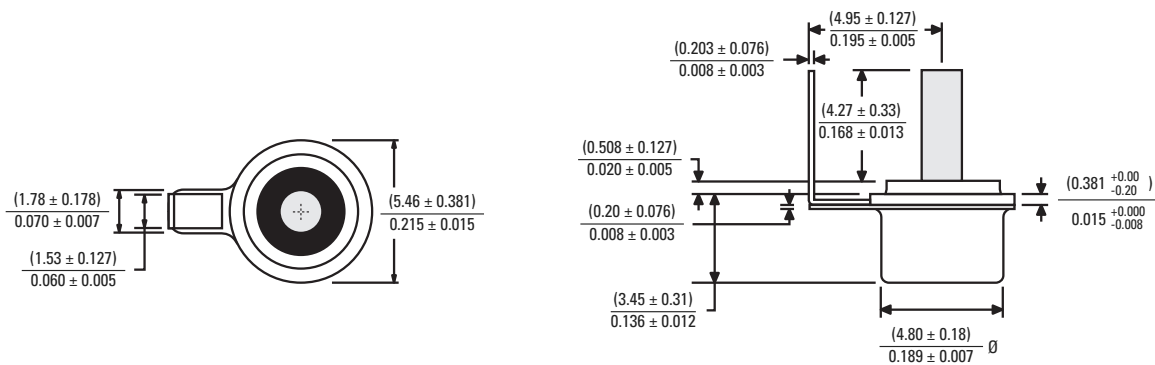


STANDARD CONFIGURATIONS

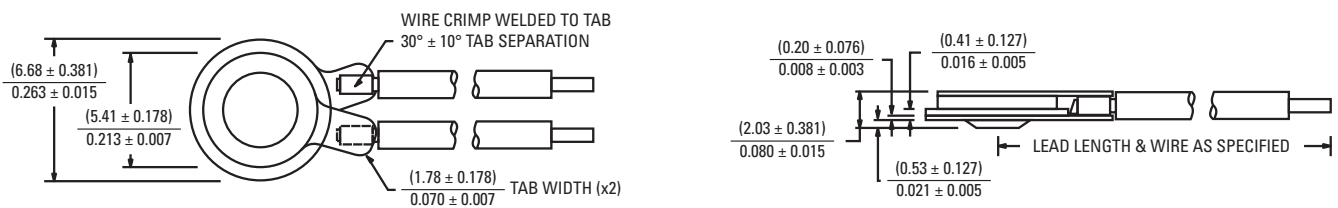
3BT-8 Grounded Case Construction | Approx. wt. 0.4 grams | Conforms to MIL-PRF-24236/19 | Config 4



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

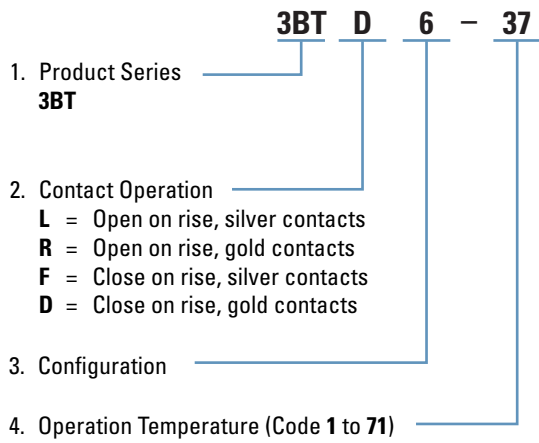


4BT-2 Grounded Case Construction | Approx. wt. 0.9 grams | Conforms to MIL-PRF-24236/19 | Config 1



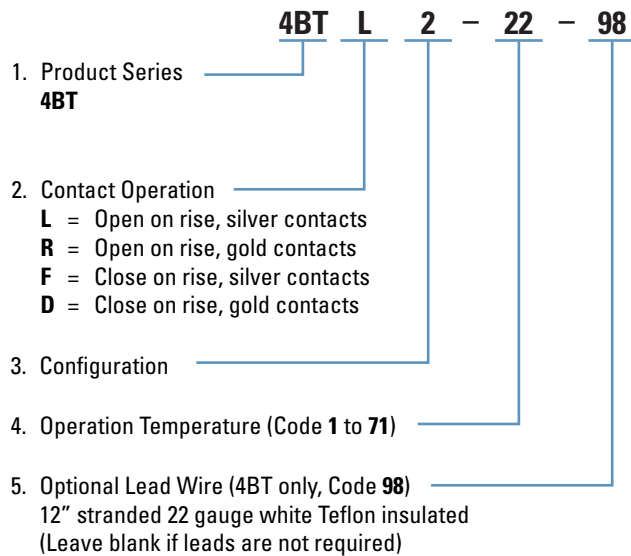
Additional configurations available, contact Sensata Technologies for more information. All dimensions are nominal, (millimeters) / inches.

STANDARD 3BT PART NUMBER BUILDER



The example to the left is a 3BT-6 configuration, close on rise, gold contacts, close on rise at $82^{\circ}\text{C} \pm 4.4^{\circ}\text{C}$, open at $65^{\circ}\text{C} \pm 4.4^{\circ}\text{C}$.

STANDARD 4BT PART NUMBER BUILDER



The example to the left is a 4BT-2 configuration, open on rise, silver contacts, open on rise at $41^{\circ}\text{C} \pm 4.4^{\circ}\text{C}$, close at $24^{\circ}\text{C} \pm 4.4^{\circ}\text{C}$ with 12" wire leads



KLIXON® | 5BT Series

SPDT Hermetic Thermostats, -54°C to 204°C

FEATURES

- Single Pole / Double Throw (SPDT)
- Preset temperature set points, non-adjustable calibration
- High resistance to shock and vibration
- Hermetically sealed, vacuum baked and back-filled with nitrogen
- Various mounting configurations available
- Qualified to MIL-PRF-24236/24

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. Applications include data processing equipment, computers, electronic equipment, communication equipment, cooling and heating systems.

SPECIFICATIONS			
Contact Ratings	<i>Cycles</i>	<i>Voltage</i>	<i>Amps (resistive)</i>
	100,000	125VAC, 30VAC, 30 VDC	2.0
	50,000	125VAC, 30VAC, 30 VDC	3.0
Contact Operations	SPDT (Single Pole, Double Throw)		
Operating Temperature	-54°C to 204°C (-65°F to 400°F)		
Dielectric Strength	1250 VAC, rms, 60 cycles for 1 minute, terminal to case per MIL-STD-202, Method 301		
Contact Resistance	0.050 ohms maximum per MIL-STD-202, Method 307		
Insulation Resistance	100 megaohms min. at 500 VDC		
Vibration	10-2000 Hz, 10G, per MIL-STD-202, Method 204, Condition D		
Shock	60G, 11 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		
Humidity	MIL-STD-202, Method 103, Condition A		
Sand & Dust	MIL-STD-202, Method 110, Condition A		
Weight	6 grams (without bracket) to 7 grams (with bracket)		
Ambient Temperature Range	-54°C to 232°C (-65°F to 450°F) <i>Maximum ambient exposure while in the closed position is 93°C above contact closing temperature.</i>		

STANDARD TEMPERATURE SETTINGS

OPERATING TEMPERATURE		DIFFERENTIAL		TOLERANCE	
°C	°F	°C	°F	± °C	± °F
- 54	- 65	17	30	6	10
- 40	- 40	17	30	6	10
-26	- 15	17	30	6	10
- 18	0	11	20	4.4	8
- 12	10	11	20	4.4	8
- 7	20	11	20	4.4	8
- 1	30	11	20	4.4	8
4	40	11	20	4.4	8
10	50	11	20	4.4	8
16	60	11	20	4.4	8
21	70	11	20	4.4	8
27	80	11	20	4.4	8
32	90	11	20	4.4	8
38	100	11	20	4.4	8
43	110	11	20	4.4	8
49	120	11	20	4.4	8
54	130	11	20	4.4	8
60	140	11	20	4.4	8
66	150	11	20	4.4	8
71	160	11	20	4.4	8
77	170	11	20	4.4	8

OPERATING TEMPERATURE		DIFFERENTIAL		TOLERANCE	
°F	°C	°F	°C	± °F	± °C
180	82	20	11.1	8	4.4
190	88	20	11.1	8	4.4
200	93	20	11.1	8	4.4
210	99	20	11.1	8	4.4
220	104	20	11.1	8	4.4
230	110	20	11.1	8	4.4
240	116	20	11.1	8	4.4
250	121	20	11.1	8	4.4
260	127	20	11.1	8	4.4
270	132	20	11.1	8	4.4
280	138	20	11.1	8	4.4
290	143	20	11.1	8	4.4
300	149	20	11.1	8	4.4
310	154	25	13.9	10	5.6
320	160	25	13.9	10	5.6
330	166	25	13.9	10	5.6
340	171	25	13.9	10	5.6
350	177	25	13.9	10	5.6
375	191	35	19.4	12	6.7
400	204	35	19.4	12	6.7

Consult factory for additional temperatures

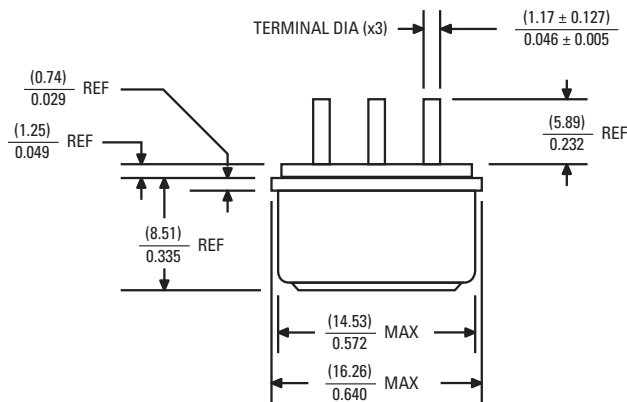
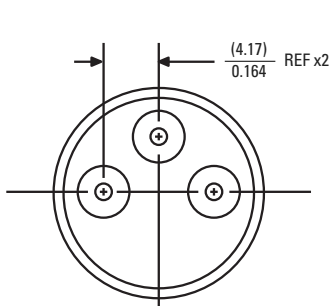
STANDARD CONFIGURATIONS

5BT-2

Pin Type Terminals

SPDT (Single Pole, Double Throw)

Conforms to MIL-S-24236/24

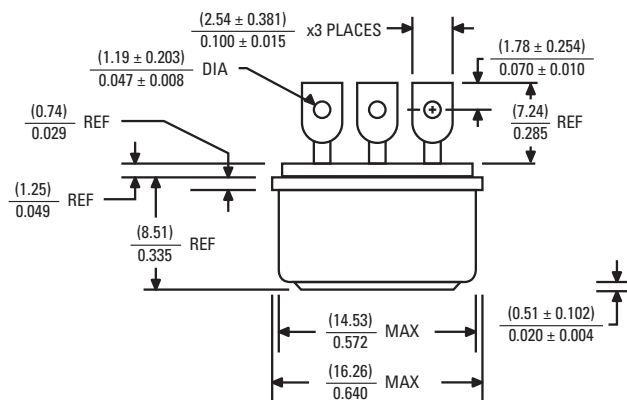
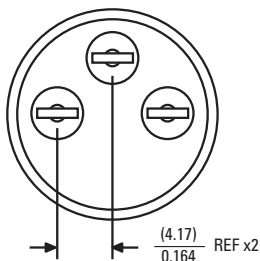


5BT-4

Flattened Pierced Terminals

SPDT (Single Pole, Double Throw)

Conforms to MIL-S-24236/24

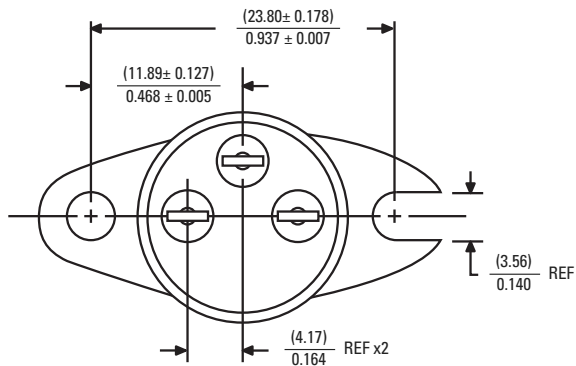


5BT-5

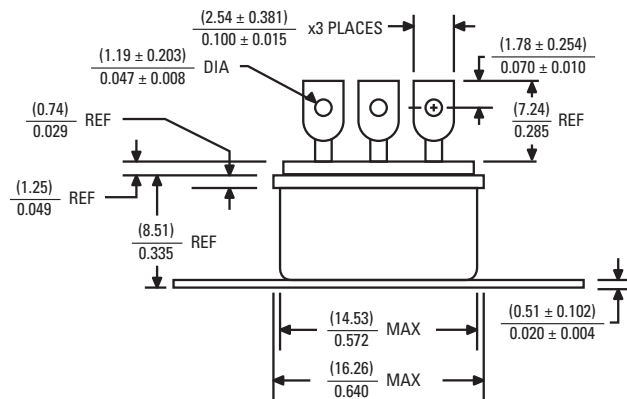
Surface Mount Bracket

SPDT (Single Pole, Double Throw)

Conforms to MIL-S-24236/24

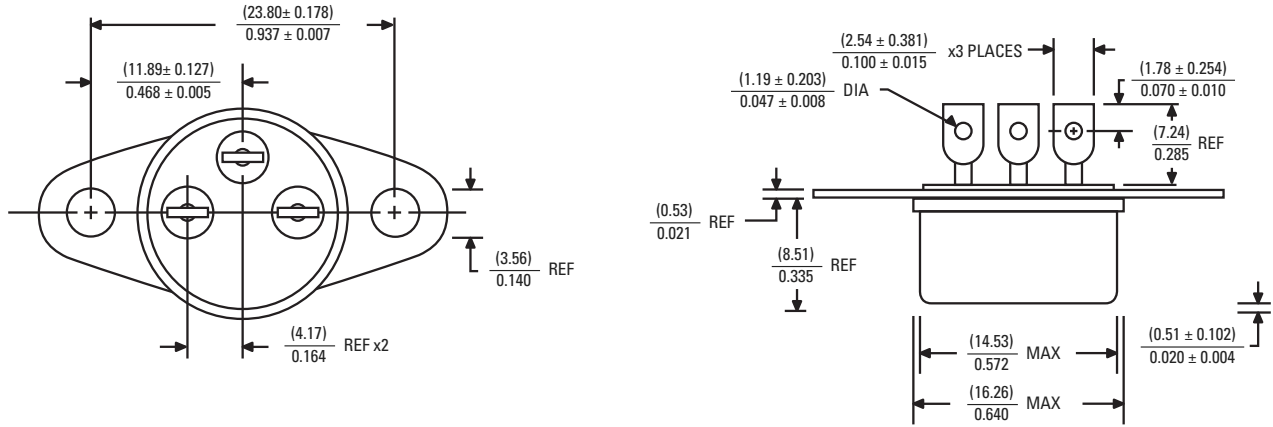


5BT-7 has similar construction, but with pin type terminals



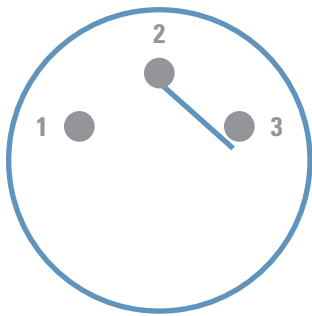
STANDARD CONFIGURATIONS

5BT-6 | Top Mounting Bracket | SPDT (Single Pole, Double Throw) | Conforms to MIL-S-24236/24



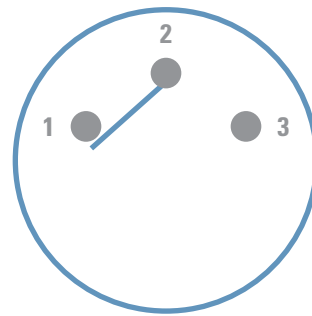
Additional configurations available, contact Sensata Technologies for more information.

LOW TEMPERATURE CONTACT POSITION

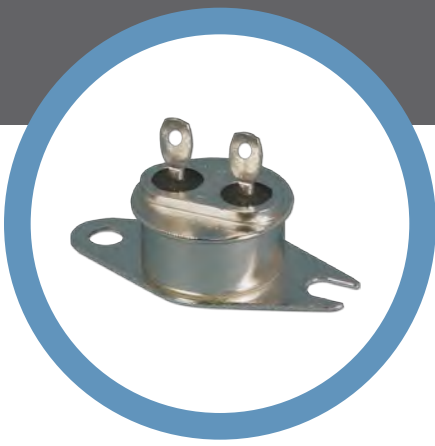


Terminals 1 & 2 are opened and terminals 2 & 3 are closed at the low temperature settings

HIGH TEMPERATURE CONTACT POSITION



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



KLIXON® | M1 and 11041 Series

½" Disc Hermetic Thermostats, -54°C to 288°C, SPST

FEATURES

- Single Pole / Single Throw (SPST)
- Preset temperature set points, non-adjustable calibration
- High resistance to shock and vibration
- Hermetically sealed, vacuum baked and back-filled with nitrogen
- Various mounting configurations available
- Qualified to MIL-PRF-24236/1

INTRODUCTION

The Klixon® M1/11041 series of thermostats are engineered for exceptional vibration and shock resistance to provide reliable switching in the most demanding applications. Prior to the final weld, finished assemblies are vacuum baked and back-filled with dry nitrogen. The inert, dry atmosphere eliminates moisture and other volatiles to prevent condensation at low temperatures or possible contact contamination at high temperatures. This back-fill also improves the dielectric characteristics of the device and prevents oxidation of the contacts. The M1 thermostat is the ideal choice where quality and reliability are paramount.

SPECIFICATIONS				
Contact Ratings (Resistive)	<i>Cycles</i>	<i>30VDC / 30VAC</i>	<i>125VAC</i>	<i>250VAC</i>
	100,000	5.0 amps	2.0 amps	1.0 amps
	50,000	5.5 amps	3.0 amps	1.5 amps
	25,000	6.0 amps	4.0 amps	2.0 amps
	10,000	6.5 amps	5.0 amps	2.5 amps
	5,000	7.0 amps	6.0 amps	3.0 amps
Operating Temperature	-54°C to 288°C (-65°F to 550°F)			
Dielectric Strength	1250 VAC, rms (root mean square), 60 cycles for 1 minute, terminal to case per MIL-STD-202, Method 301			
Contact Resistance	0.050 ohms maximum per MIL-STD-202, Method 307			
Insulation Resistance	100 megohms min. at 500 VDC			
Vibration	5-2000 Hz, 20G, per MIL-STD-202, Method 204, Condition D (monitored) 5-1000 Hz, 100G, per MIL-STD-202, Method 204, Condition D (unmonitored) 1000-2000 Hz, 50G, per MIL-STD-202, Method 204, Condition D (unmonitored)			
Shock	100G, 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			
Average Weight	4.8 grams (without bracket) to 5.9 grams (with bracket)			
Ambient Temperature Range	-62°C to 288°C (-80°F to +550°F) <i>Maximum ambient exposure while in the closed position is 93°C above contact closing temperature.</i>			

STANDARD TEMPERATURE SETTINGS					
OPERATING TEMPERATURE		DIFFERENTIAL		TOLERANCE	
°C	°F	°C	°F	± °C	± °F
-54	-65	17	30	6	10
-40	-40	17	30	6	10
-26	-15	17	30	6	10
-18	0	11	20	3	5
-12	10	11	20	3	5
-7	20	11	20	3	5
-1	30	11	20	3	5
4	40	11	20	3	5
10	50	11	20	3	5
16	60	11	20	3	5
21	70	11	20	3	5
27	80	11	20	3	5
32	90	11	20	3	5
38	100	11	20	3	5
43	110	11	20	3	5
49	120	11	20	3	5
54	130	11	20	3	5
60	140	11	20	3	5
66	150	11	20	3	5
71	160	11	20	3	5
77	170	11	20	3	5
82	180	11	20	3	5
88	190	11	20	3	5
93	200	11	20	3	5

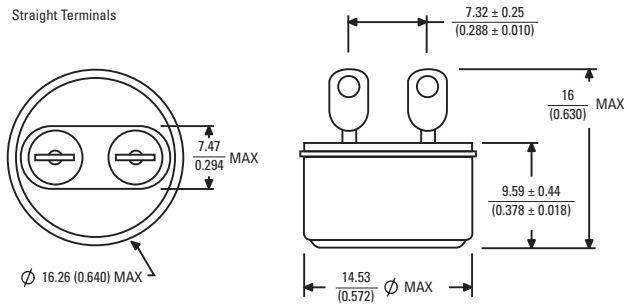
STANDARD TEMPERATURE SETTINGS					
OPERATING TEMPERATURE		DIFFERENTIAL		TOLERANCE	
°C	°F	°C	°F	± °C	± °F
99	210	17	30	4.4	8
104	220	17	30	4.4	8
110	230	17	30	4.4	8
116	240	17	30	4.4	8
121	250	17	30	4.4	8
127	260	17	30	4.4	8
132	270	17	30	4.4	8
138	280	17	30	4.4	8
143	290	17	30	4.4	8
149	300	17	30	4.4	8
154	310	22	40	7	12
160	320	22	40	7	12
166	330	22	40	7	12
171	340	22	40	7	12
177	350	22	40	7	12
191	375	22	40	7	12
204	400	22	40	7	12
218	425	22	40	7	12
232	450	22	40	7	12
246	475	39	70	14	25
260	500	39	70	14	25
274	525	39	70	14	25
288	550	39	70	14	25
<i>Consult factory for additional temperatures</i>					

STANDARD CONFIGURATIONS

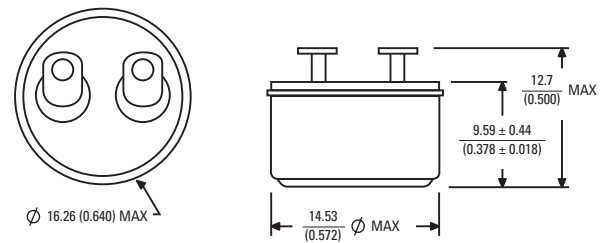
MM / (INCHES)

No Bracket | SPST (Single Pole, Single Throw)

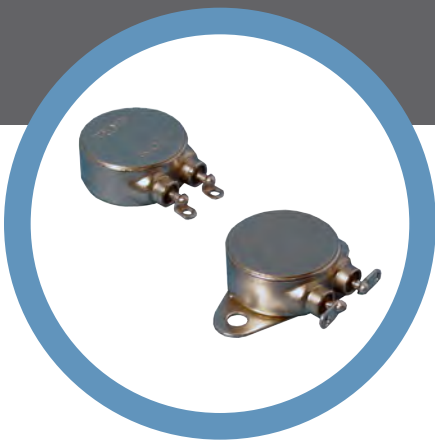
Straight Terminals



Bent Terminals



NOTE: Stud mount, surface and top mounting brackets are available. Dimensions listed are for reference only. Please contact Sensata for more detailed envelope drawings.



KLIXON® | M2 Series

Narrow Differential Thermostats, -18°C to 149°C, SPST

FEATURES

- Low profile, narrow differential
- Hermetically sealed, vacuum baked and back-filled with nitrogen
- Single Pole / Single Throw (SPST)
- High resistance to shock and vibration
- Preset temperature set points, non-adjustable calibration
- Qualified to MIL-PRF-24236/20, S-311-641
- On NASA S-311-664 QPL

INTRODUCTION

The Klixon® M2 series of thermostats are engineered for exceptional vibration and shock resistance to provide reliable switching in a low-profile, narrow differential package for the most demanding applications. Prior to the final weld, finished assemblies are vacuum baked and back-filled with dry nitrogen. The inert, dry atmosphere eliminates moisture and other volatilizates to prevent condensation at low temperatures or possible contact contamination at high temperatures. This back-fill also improves the dielectric characteristics of the device and prevents oxidation of the contacts. The M2 thermostat is the ideal choice where quality and reliability are paramount. Applications include: airplane wing de-icing systems, satellite heaters, aircraft controls, warning devices, and electronic device overheat protection.

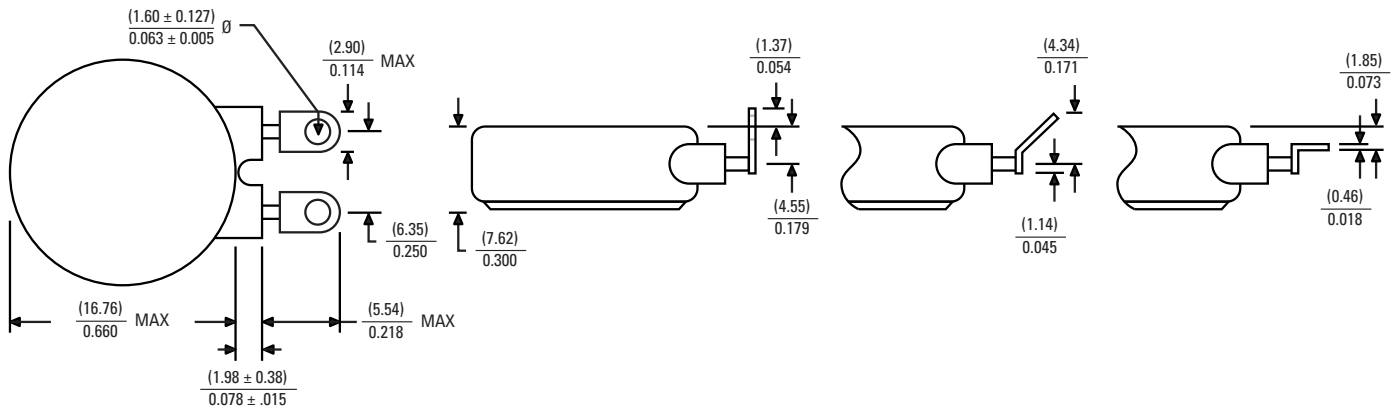
SPECIFICATIONS			
Contact Ratings (Resistive)	<i>Cycles</i>	<i>30VDC / 30VAC</i>	<i>120VAC</i>
	250,000	2.0 amps	2.0 amps
Operating Temperature	-18°C to 149°C (0°F to 300°F)		
Dielectric Strength	1250 VAC, rms, 60 cycles for 1 minute, terminal to case per MIL-STD-202, Method 301		
Contact Resistance	0.050 ohms maximum per MIL-STD-202, Method 307		
Vibration	10-2000 Hz, 10G, per MIL-STD-202, Method 204, Condition D (monitored)		
Shock	100G, 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		
Average Weight	5.4 grams (average)		
Ambient Temperature Range	-54°C to 204°C (-65°F to +400°F) <i>Maximum ambient exposure for close on rise devices is 38°C above contact operating temperature, for open on rise devices it is 38°C below contact operating temperature.</i>		

STANDARD TEMPERATURE SETTINGS

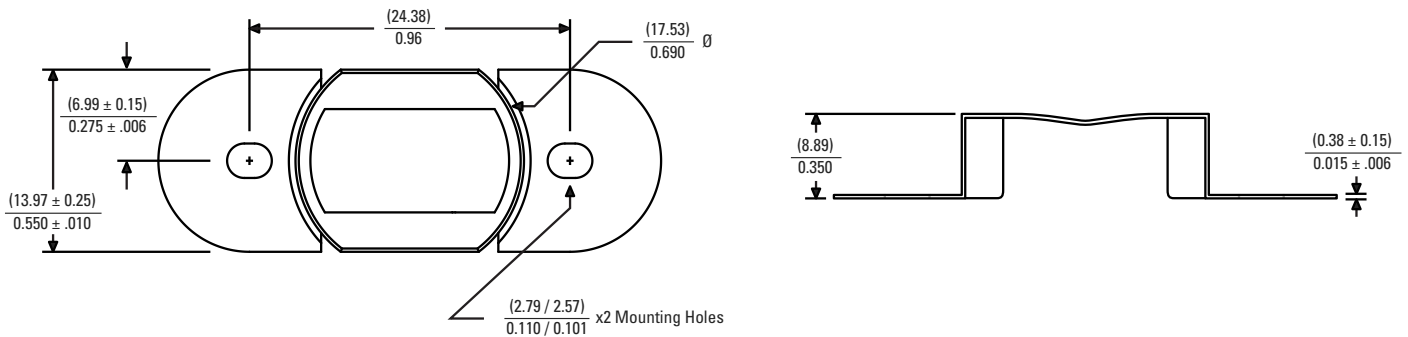
CLOSING TEMPERATURE RANGE	OPENING TEMPERATURE DIFFERENTIAL	TOLERANCE	
		Standard	Special
17°C to 121°C (0°F to 250°F)	1°C to 3°C (2°F to 5°F)	± 2°C (± 4°F)	± 1.7°C (± 3°F)
122°C to 149°C (251°F to 300°F)	2°C to 4°C (3°F to 7°F)	± 3°C (± 5°F)	± 2°C (± 4°F)

The standard operating temperatures, differential and tolerances are shown in this table, but can be customized to meet your specific requirements.

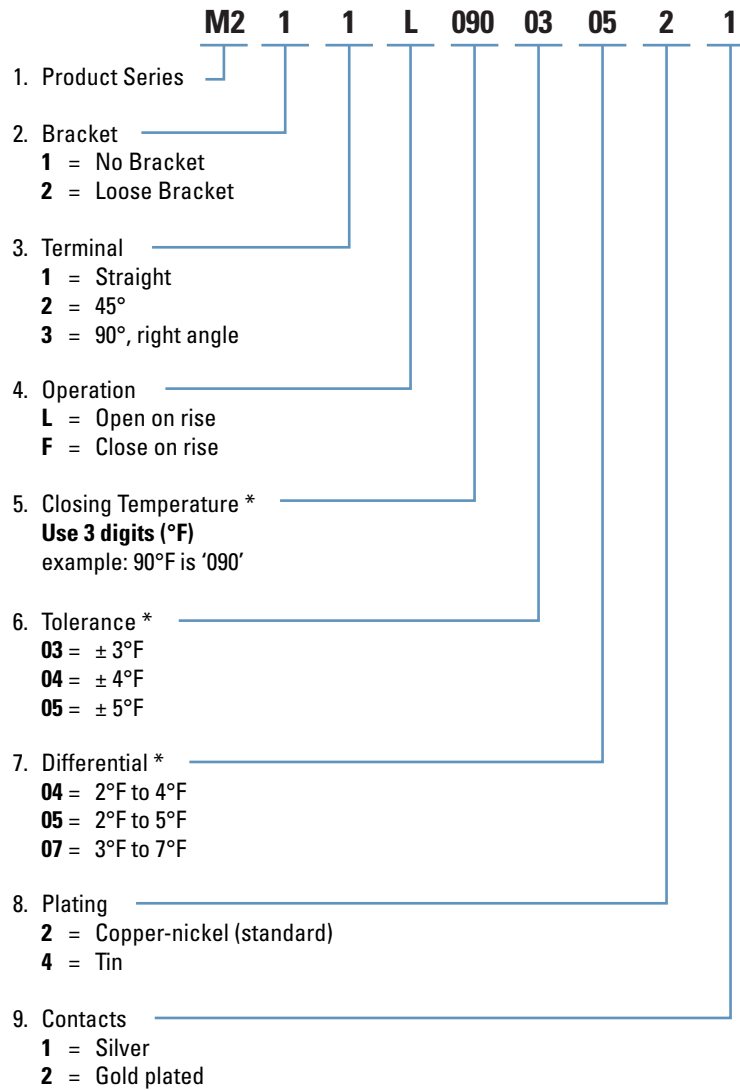
STANDARD CONFIGURATIONS



Mounting Bracket



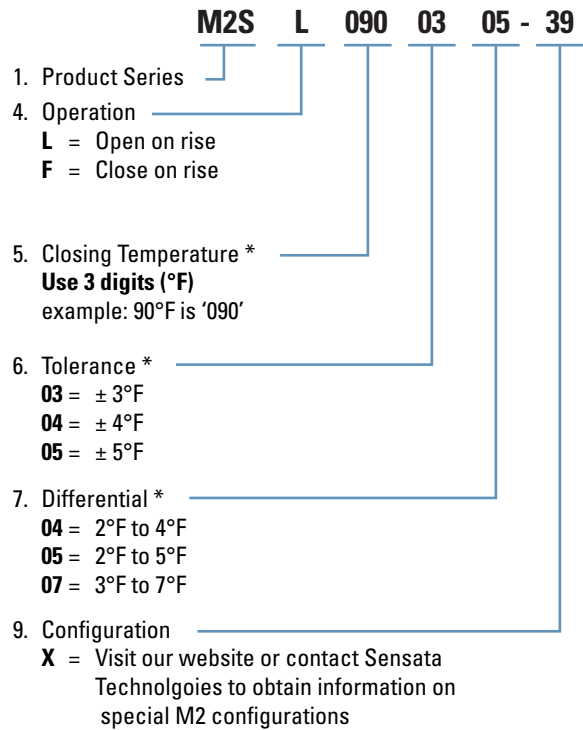
STANDARD M2 PART NUMBER BUILDER

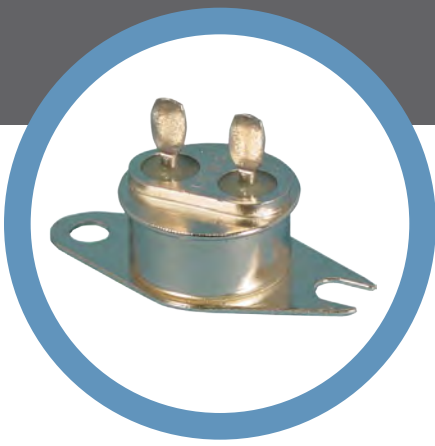


* See temperature table for standard tolerances / differentials

Example is a M2 series, no bracket, straight terminals, open on rise at 90°F ± 3°F with 2°F to 5°F differential, copper-nickel plating, silver contacts

SPECIAL M2 PART NUMBER BUILDER





KLIXON® | 4344 Series

1/2" Disc Hermetic Thermostats

-54°C to 288°C, SPST

FEATURES

- Single Pole / Single Throw (SPST)
- Preset temperature set points, non-adjustable calibration
- High resistance to shock and vibration
- Max resistive load: 7 amps
- Hermetically sealed, welded steel construction
- Various mounting configurations available, including probe, strap-mount or immersion thermostat
- Canadian-UL (UL File #34618), CSA (File #LR24458)

INTRODUCTION

The Klixon® 4344 series of thermostats are engineered with a snap-acting bimetal disc, producing a crisp, positive switching action. The standard 4344 comes copper-nickel plated with silver contacts. Other plating finishes are available upon request.

SPECIFICATIONS				
Contact Ratings (Resistive)	<i>Cycles</i>	<i>30VDC / 30VAC</i>	<i>125VAC</i>	<i>250VAC</i>
	100,000	5.0 amps	2.5 amps	1.0 amps
	50,000	5.5 amps	3.0 amps	1.5 amps
	25,000	6.0 amps	4.0 amps	2.0 amps
	10,000	6.5 amps	5.0 amps	2.5 amps
	5,000	7.0 amps	6.0 amps	3.0 amps
Gold Contact Ratings (Resistive)	<i>30VDC / 30VAC</i>	<i>115VAC</i>	<i>220VAC</i>	
	500 mA and below	200 mA and below	100 mA and below	
Operating Temperature	-54°C to 288°C (-65°F to 550°F)			
Dielectric Strength	1250 VAC, rms, 60 cycles for 1 minute, terminal to case per MIL-STD-202, Method 301			
Contact Resistance	0.050 ohms maximum per MIL-STD-202, Method 307			
Vibration	5-2000 Hz, 20G, per MIL-STD-202, Method 204, Condition D (unmonitored)			
Shock	100G, 6 milliseconds, per MIL-STD-202, Method 213			
Hermeticity	1 x 10 ⁻⁵ atm cc/sec. maximum, per MIL-STD-202, Method 112, Condition C			
Salt Spray	Per MIL-STD-202, Method 101, Condition B, 5% solution			
Average Weight	4.8 grams (without bracket) to 5.9 grams (with bracket)			
Ambient Temperature Range	-62°C to 288°C (-80°F to +550°F)			
	<i>Maximum ambient exposure while in the closed position is 93°C above contact closing temperature.</i>			
Electrical Ratings	720 VA, 110-600 VAC, break but not make, ungrounded cup*			
	360 VA, 600 VAC, make and break, ungrounded cup			
	125 VA Pilot Duty, 24 to 240 VAC, make and break, grounded or ungrounded cup			
<i>*At this rating, suitable as a control circuit, temperature limiting device for hazardous location motors and generators.</i>				

STANDARD TEMPERATURE SETTINGS					
OPERATING TEMPERATURE		DIFFERENTIAL		TOLERANCE	
°C	°F	°C	°F	± °C	± °F
-54	-65	17	30	6	10
-40	-40	17	30	6	10
-26	-15	17	30	6	10
-18	0	11	20	3	5
-12	10	11	20	3	5
-7	20	11	20	3	5
-1	30	11	20	3	5
4.4	40	11	20	3	5
10	50	11	20	3	5
16	60	11	20	3	5
21	70	11	20	3	5
27	80	11	20	3	5
32	90	11	20	3	5
38	100	11	20	3	5
43	110	11	20	3	5
49	120	11	20	3	5
54	130	11	20	3	5
60	140	11	20	3	5
66	150	11	20	3	5
71	160	11	20	3	5
77	170	11	20	3	5
82	180	11	20	3	5
88	190	11	20	3	5
93	200	11	20	3	5

STANDARD TEMPERATURE SETTINGS					
OPERATING TEMPERATURE		DIFFERENTIAL		TOLERANCE	
°C	°F	°C	°F	± °C	± °F
99	210	17	30	4.4	8
104	220	17	30	4.4	8
110	230	17	30	4.4	8
116	240	17	30	4.4	8
121	250	17	30	4.4	8
127	260	17	30	4.4	8
132	270	17	30	4.4	8
138	280	17	30	4.4	8
143	290	17	30	4.4	8
149	300	17	30	4.4	8
154	310	22	40	7	12
160	320	22	40	7	12
166	330	22	40	7	12
171	340	22	40	7	12
177	350	22	40	7	12
191	375	22	40	7	12
204	400	22	40	7	12
218	425	22	40	7	12
232	450	22	40	7	12
246	475	39	70	14	25
260	500	39	70	14	25
274	525	39	70	14	25
288	550	39	70	14	25
<i>Consult factory for additional temperatures</i>					



KLIXON® | 4391 Series

High Capacity, Hermetically Sealed Thermostats SPST or SPDT, Manual or Auto Reset

FEATURES

- Single Pole / Single Throw (SPST) or Single Pole / Double Throw (SPDT)
- Automatic or manual reset
- Preset temperature set points, non-adjustable calibration
- High current capacity, environmentally sealed
- Normally open or closed
- Various mounting brackets are available
- Capacity optional overmold

INTRODUCTION

The Klixon® 4391 series snap-acting disc type control is designed to provide crisp, positive switching action. The 4391 is the most versatile of the Klixon precision thermostats with its available SPST or SPDT switching, automatic or manual reset, and overmold options.

SPECIFICATIONS				
Contact Ratings (Resistive)	<i>Cycles</i>	<i>30VDC / 30VAC</i>	<i>125VAC</i>	<i>250VAC</i>
	100,000	10.0 amps	4.0 amps	2.0 amps
	50,000	11.0 amps	6.0 amps	3.0 amps
	25,000	12.0 amps	8.0 amps	4.0 amps
	10,000	13.0 amps	10.0 amps	5.0 amps
	5,000	14.0 amps	12.0 amps	6.0 amps
Operating Temperature	Non-Overmold: -18°C to 232°C (0°F to 450°F) Silicone Overmold: -18°C to 204°C (0°F to 400°F)			
Dielectric Strength	1250 VAC, rms, 60 cycles for 1 minute (1500VAC available upon request)			
Vibration	5-500 Hz, 3G (std), 5-500, 5G (high vibration construction option)			
Hermeticity	1 x 10 ⁻⁵ atm cc/sec. maximum			
Ambient Temperature Range	Non-Overmold: -54°C to 232°C (-65°F to 450°F) Silicone Overmold: -51°C to 204°C (-60°F to 400°F)			
Weight	Non-Overmold: 21 grams w/ Silicone Overmold: 56 grams			

STANDARD TEMPERATURE SETTINGS

OPERATING TEMPERATURE	SPST (Single Pole / Single Throw), Standard Vibration				SPDT (Single Pole / Double Throw), High Vibration			
	DIFFERENTIAL		TOLERANCE		DIFFERENTIAL		TOLERANCE	
	°C	°F	± °C	± °F	°C	°F	± °C	± °F
-18 to 93°C (0 to 200°F)	8	15	3	5	14	25	4.4	8
-99 to 149°C (210 to 300°F)	14	25	4	7	17	30	6	10
-160 to 177°C (325 to 350°F)	25	45	7	12	25	45	7	12
-191 to 232°C * (375 to 450°F) auto reset only	33	60	8	15	14	60	8	15

Standard temperature set points are at every 5°F degrees (for example, 320°F, 325°F, 330°F).
Consult Sensata Technologies if a custom operating temperature range is required.

* Available in automatic reset only



KLIXON® | 7BT2 Series

High Capacity, Environmentally Sealed Thermostats
-1°C to 204°C, SPST

FEATURES

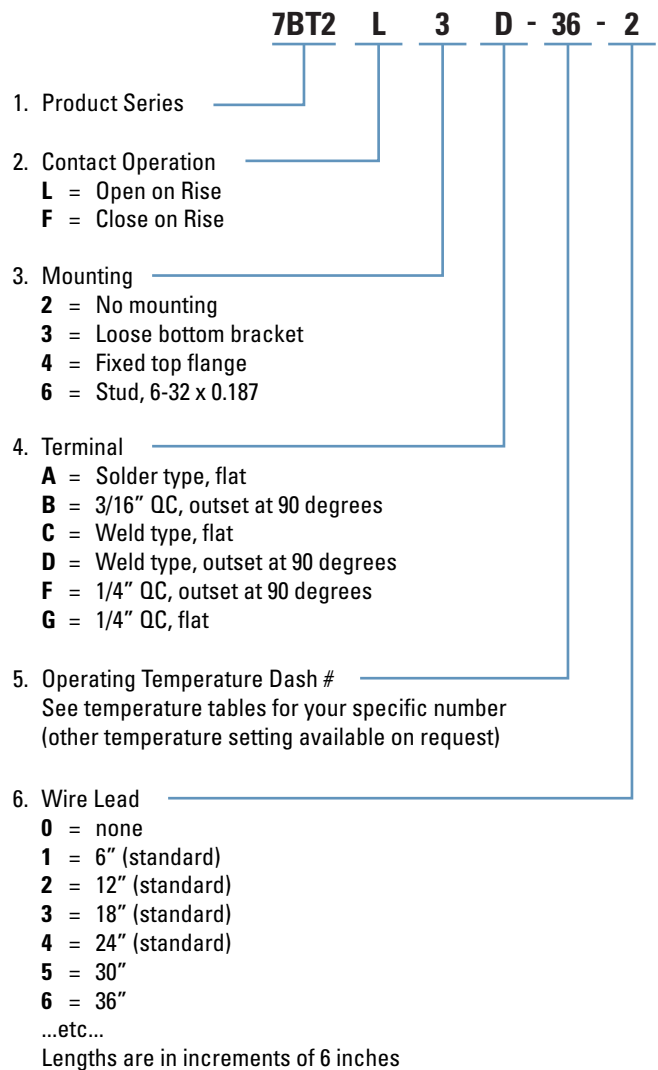
- Single Pole / Single Throw (SPST)
- Preset temperature set points, non-adjustable calibration
- High current capacity, environmentally sealed
- Max resistive load: 15 amps
- UL, Canadian-UL (UL File #34618), KEMA (ENEC, file #2018218.03)

INTRODUCTION

The Klixon® 7BT2 thermostat is a snap-acting disc type control designed to provide crisp, positive switching action. The bimetal disc and electrical contacts are enclosed in a stainless steel cup to provide protection from dust and other foreign particles. The 7BT2 is available in a variety of configurations, making it a versatile candidate for your thermal protection needs.

SPECIFICATIONS				
Contact Ratings (Resistive, Max Temp 400°F)	<i>Cycles</i>	<i>120 VAC</i>	<i>240VAC</i>	<i>30VDC</i>
	100,000	15.0A	7.5A	10A
Operating Temperature	-1°C to 204°C (30°F to 400°F)			
Dielectric Strength	2000 VAC, rms, 60 cycles for 1 minute, terminal to case			
Ambient Temperature Range	-29°C to 204°C (-20°F to +400°F)			

STANDARD PART NUMBER BUILDER



STANDARD TEMPERATURE SETTINGS

DASH #	OPERATING TEMPERATURE		DIFFERENTIAL		TOLERANCE	
	°C	°F	°C	°F	± °C	± °F
1	49	120	11	20	3	5
2	52	125	11	20	3	5
3	54	130	11	20	3	5
4	57	135	11	20	3	5
5	60	140	11	20	3	5
6	63	145	11	20	3	5
7	66	150	11	20	3	5
8	68	155	11	20	3	5
9	71	160	11	20	3	5
10	74	165	11	20	3	5
11	77	170	11	20	3	5
12	79	175	11	20	3	5
13	82	180	11	20	3	5
14	85	185	11	20	3	5
15	88	190	11	20	3	5
16	91	195	11	20	3	5
17	93	200	11	20	3	5
18	96	205	17	30	4.4	8
19	99	210	17	30	4.4	8
20	102	215	17	30	4.4	8
21	104	220	17	30	4.4	8
22	107	225	17	30	4.4	8
23	110	230	17	30	4.4	8
24	113	235	17	30	4.4	8
25	116	240	17	30	4.4	8
26	118	245	17	30	4.4	8

DASH #	OPERATING TEMPERATURE		DIFFERENTIAL		TOLERANCE	
	°C	°F	°C	°F	± °C	± °F
27	121	250	17	30	4.4	8
28	124	255	17	30	4.4	8
29	127	260	17	30	4.4	8
30	129	265	17	30	4.4	8
31	132	270	17	30	4.4	8
32	135	275	17	30	4.4	8
33	138	280	17	30	4.4	8
34	141	285	17	30	4.4	8
35	143	290	17	30	4.4	8
36	146	295	17	30	4.4	8
37	149	300	17	30	4.4	8
38	152	305	22	40	7	12
39	154	310	22	40	7	12
40	157	315	22	40	7	12
41	160	320	22	40	7	12
42	163	325	22	40	7	12
43	166	330	22	40	7	12
44	168	335	22	40	7	12
45	171	340	22	40	7	12
46	174	345	22	40	7	12
47	177	350	22	40	7	12
<p><i>For 30° F to 110° F and 360° F to 400° F, consult factory for a customer specific dash #</i></p>						



KLIXON® | 6786 Series

½" Disc, Low Profile Thermostats
-29°C to 177°C, SPST

FEATURES

- Single Pole / Single Throw (SPST)
- Preset temperature set points, non-adjustable calibration
- Normally open or normally closed
- Max resistive load: 7 amps
- Environmentally sealed, low profile
- Various mounting configurations available including brackets, studs, and with or without surface mounting brackets
- UL recognized, Canadian-UL (UL File #34618)

INTRODUCTION

The Klixon® 6786 thermostat is a snap-acting disc type control designed to provide crisp, positive switching action for applications where maximum shock and vibration resistance is required. The Klixon snap-acting disc and fine silver electrical contacts are sealed in a stainless steel cup to provide protection from dust and other foreign particles. This construction also assures rapid thermal response plus dependable circuit operation at all times. The small size of the 6786 makes it particularly suitable where space and weight accommodations are limited.

SPECIFICATIONS

Contact Ratings (Resistive)	<i>Cycles</i>	<i>30VDC / 30VAC</i>	<i>125VAC</i>	<i>250VAC</i>
	100,000	5.0 amps	2.0 amps	1.0 amps
50,000	5.5 amps	3.0 amps	1.5 amps	
25,000	6.0 amps	4.0 amps	2.0 amps	
10,000	6.5 amps	5.0 amps	2.5 amps	
5,000	7.0 amps	6.0 amps	3.0 amps	
Operating Temperature	-29°C to 177°C (-20°F to 350°F)			
Dielectric Strength	1250 VAC, rms, 60 cycles for 1 minute, terminal to case per MIL-STD-202, Method 301			
Vibration	10-500 Hz, 10G, per MIL-STD-202, Method 204, Condition A (unmonitored)			
Shock	30G, 11 milliseconds			
Ambient Temperature Range	-54°C to 204°C (-65°F to +400°F)			
Average Weight	2.5 grams			

STANDARD TEMPERATURE SETTINGS

OPERATING TEMPERATURE		DIFFERENTIAL		TOLERANCE	
°C	°F	°C	°F	± °C	± °F
-29	-20	17	30	6	10
-18	0	11	20	6	10
-12	10	11	20	6	10
-7	20	11	20	4.4	8
-1	30	11	20	4.4	8
4.4	40	11	20	4.4	8
10	50	11	20	4.4	8
16	60	11	20	4.4	8
21	70	11	20	4.4	8
27	80	11	20	4.4	8
32	90	11	20	4.4	8
38	100	11	20	4.4	8
43	110	11	20	4.4	8
49	120	11	20	4.4	8
54	130	11	20	4.4	8
60	140	11	20	4.4	8
66	150	11	20	4.4	8
71	160	11	20	4.4	8
77	170	11	20	4.4	8

OPERATING TEMPERATURE		DIFFERENTIAL		TOLERANCE	
°C	°F	°C	°F	± °C	± °F
82	180	11	20	4.4	8
88	190	11	20	4.4	8
93	200	11	20	6	10
99	210	17	30	6	10
104	220	17	30	6	10
110	230	17	30	6	10
116	240	17	30	6	10
121	250	17	30	6	10
127	260	17	30	6	10
132	270	17	30	6	10
138	280	17	30	6	10
143	290	17	30	6	10
149	300	17	30	6	10
154	310	22	40	7	12
160	320	22	40	7	12
166	330	22	40	7	12
171	340	22	40	7	12
177	350	22	40	7	12
<i>Consult factory for additional temperatures</i>					



KLIXON® | Probe Assemblies

Custom Immersion-Type Thermostat Probes

FEATURES

- Various Klixon® thermostats in custom probe assemblies
- Preset temperature set points, non-adjustable calibration
- Normally open or normally closed
- Hermetically sealed (probe only)
- Extreme temperature, fast response, narrow differential or custom probe assembly configurations
- Qualified to MIL-S-24236, MIL-S-24236/2, MIL-S-24236/11, and MIL-S-24236/25 (order by MS number)

INTRODUCTION

To meet a wide range of application requirements, Klixon® probe-type thermostat packages are available in a variety of sizes, configurations, and thermal characteristics. Select from one of our existing designs, or specify custom requirements to suit your needs.

- **Extreme Temperature Probes:**
Constant speed drives, aircraft refrigeration systems, food processing equipment, and missile hydraulic systems often require protection from or indication of extreme high or low temperatures. These Klixon® snap-acting thermostat probes are designed to provide reliable, consistent performance over a long cycle life in the harshest of environments. These probes provide excellent shock and vibration resistance and operate as low as -54°C (-65°F) and as high as 288°C (550°F) and incorporate the reliable Klixon M1/11041 thermostat.
- **Fast Response Probes:**
Quick response to rapidly changing temperature is a virtue of the low thermal mass series of probe. The Klixon® 3BT Tiny Stat™ is located at the end of the probe for ultimate sensitivity. Quick response to rapidly changing temperatures is a virtue of the low thermal mass series probes.
- **Narrow Differential Control Probes:**
These thermostat probes accurately open and close with a narrow 1°C to 4.4°C (2°F to 8°F) differential, providing close temperature control in applications ranging from environmental to power tube coolant systems. Probe assembly incorporates the reliable Klixon® M2 thermostat.



STANDARD PART NUMBER BUILDER

21542 - 03 - XXX - 01

1. Package Type _____

Extreme Temperature (M1 thermostat)

21542 = 3/4" - 16 thread w/ connector

21543 = 1/2" pipe thread w/ leads

21548 = 3/4" - 16 thread w/ leads

21549 = 1/2" pipe thread w/ connector

Narrow Differential (M2 thermostat)

21545 = 1/2" pipe thread w/ leads

21546 = 3/4" - 16 thread w/ connector

21547 = 3/4" - 16 thread w/ leads

21550 = 1/2" pipe thread w/ connector

Fast Response (3BT thermostat)

21544 = 1/8" pipe thread with leads

21557 = 1/8" pipe thread with connector

21561 = 7/16" - 20 thread with leads

21562 = 7/16" - 20 thread with connector

2. Probe Length _____

XX = value of 2 times the length of probe needed

Probes lengths available in 1/2" increments from 1" to 6",
length measured from bottom of hex to tip of probe

*For example, for a 1.5" probe, part number would
require a **03***

3. Operating Characteristics _____

XXX = 3-digit code to be assigned by Sensata Technologies
based on the customers specific requirements for the
thermostat within the assembly

4. Wire Lead _____

01 = 6"

02 = 12"

03 = 18"

...etc...

Lengths are in increments of 6 inches.

For connectors, please contact Sensata Technologies
for the code



KLIXON® | AT / KX Series

Precision Switches

-29°C to 177°C, SPST

AT FEATURES

- Meet the demands of low-level current switching applications
- Various mechanical and electrical configurations available as standard or custom configurations
- Actuation plungers of various shapes and materials available
- Multi-pole switch package options
- Wiring can be supplied as flying leads or via a variety of standard connectors
- Mounting via threaded bushings or side-plate design

KX FEATURES

- Hermetic seal provides exceptional operational freedom from environmental conditions
- Compactly designed to fit small, narrow spaces
- Available with either screw or solder lug type terminals
- Snap-acting sine switch provides exceptional resistance to shock and vibration
- Embedded leads are available
- Lead lengths can be supplied to customer requirements

INTRODUCTION

Due to its broad performance envelope, small size, and ability to be easily incorporated into a wide variety of packages, this is our most popular family of precision hermetic switches. Klixon® AT series switches are available as basic switches, basic switches with mounting brackets and actuators, or as switch packages. Packages are formed by configuring various electrical terminations, actuator means and physical construction around one or more basic switches. (Since these sources are still far from exhaustive, please call if you need something you don't see. (There are too many designs to include here.)) We would also be pleased to consider new designs for custom packaging.

Within this family there are four basic switches: the AT, the 3AT, the 4AT, and the 10AT. Each has been optimized for particular performance characteristics and is capable of meeting the demands of low-level current switching applications.

The Klixon® KX Series hermetically sealed sine switch is a precision snap-acting device. It is designed for use in the aerospace industry and for other applications where operational freedom from environmental conditions is a requirement. (Performance chart.)

KX series switches are sealed within a one-piece steel case engineered to withstand extremely low or high ambient pressures. True hermetic sealing is achieved with a metal "wave type" diaphragm at the actuating lever. The actuating arm is keyed to hold the arm in alignment and to prevent damage to the diaphragm.

The switching element is the versatile Klixon® sine switch. This simple, one-piece element eliminates knife edges and high friction joints. Rigidly supported at both ends and accurately prestressed in tension, the sine switch features outstanding resistance to shock and vibration.

Klixon® switches have been used in a variety of aircraft, weapons systems, aircraft engine and aerospace applications for well over 30 years. A brief listing of typical applications include:

- Door interlock systems
- Aircraft engine ignitions
- Aircraft missile launcher position indication
- External stores emergency jettison switches
- Stowed / deployed indication for thrust reversers
- Safety ignition indication for military jet engines
- Radar pod door switches
- Tank/armored personnel carrier missile launcher switches
- Tank gun turret position indication

SPECIFICATIONS								
		AT		3AT	4AT	10AT	KX	
Current Ratings (28VDC)	Res.	3 amp	1 amp	1 amp	3 amp	4 amp	10 amp	
	Ind.	1 amp	0.5 amp	0.5 amp	1 amp	1 amp	5 amp	
	Lamp	1 amp	0.5 amp	0.5 amp	1 amp	2 amp	3 amp	
Min Life at Rated Load Cycles		25K	50K	25K	25K	25K	25K	
Min Mechanical Life Cycles		100K		100K	50K	50K	25K	
Ambient Temperature Range		-54°C to 135°C (-65°F to 275°F)		-54°C to 232°C (-65°F to 450°F)	-171°C to 135°C (-275°F to 275°F)	-65°C to 135°C (-85°F to 275°F)	-54°C to 135°C (-65°F to 275°F)	
Dielectric Strength Terminal to Case VRMS Terminal to Terminal VRMS		1000 800		500 500	1000 800	1000 800	1250 1250	
Max Leakage Std. cc He/Dec		1 x 10 ⁻⁸					1 x 10 ⁻⁶	
Shock		200G, 6 ms sawtooth					100G	
Vibration		65G, 10 - 2000Hz, .5 DA or 65 G RMS					20G	
Insulation Resistance @ 500VDC		100 megaohms		100 megaohms	100 megaohms	100 megaohms	—	





KLIXON® | 2SE Series

Solid-State Air Flow Sensors

FEATURES

- Solid-state design for improved reliability
- SPST or SPDT configuration
- Normally open or normally closed
- Commercial or military grades available
- Low power dissipation (approximately 3 watts)
- Excellent shock and vibration resistance

INTRODUCTION

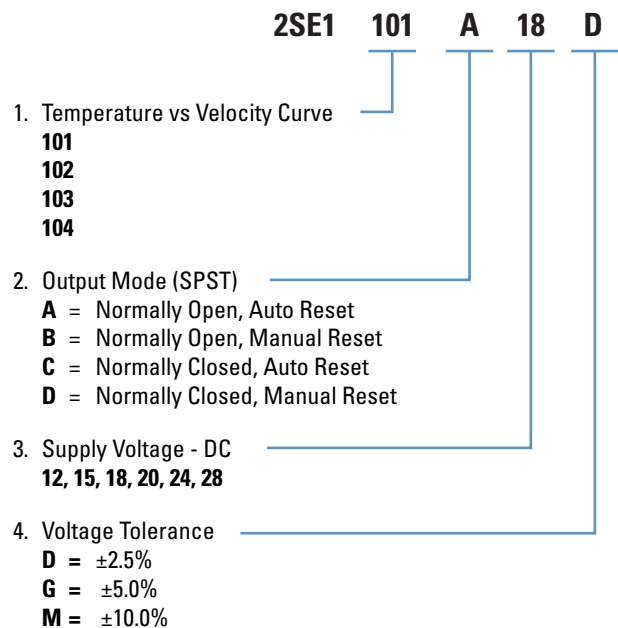
Sensata is a world leader in the design and manufacture of air flow sensors. We build devices that are high-quality, dependable, and reasonably priced. We can customize Klixon® air flow sensors to meet your engineering needs. Our solid-state vane switch is ideal for recognizing loss or reduction of airflow in electronic equipment. Typically used in power supplies, data processing equipment, and large electronic cabinets.

Unlike its electromechanical vane switch predecessor, our solid-state switch continues to provide reliable switching even in the dirtiest of environments. Klixon® air flow sensors are designed to recognize loss or reduction of airflow in:

- Power supplies
- Data processing units
- Commercial electronic equipment
- Military electronic equipment

SPECIFICATIONS	
Supply Voltage	30 VDC max
Switching Capacity	up to 400 milliamps
Operating Temperature	+10°C to +50°C
Ambient Temperature Range	up to 150°C
Life Cycles	100,000
Average Weight	20 grams

STANDARD PART NUMBER BUILDER





KLIXON® | ACMP Series

Single & Three-Phase Aircraft Motor Protectors

FEATURES

- Single and three-phase protection
- Locked rotor protection
- Neutral trap
- Thermal protection
- Meets thermal protection requirements of MIL-M-7969, direct acting type, Method III

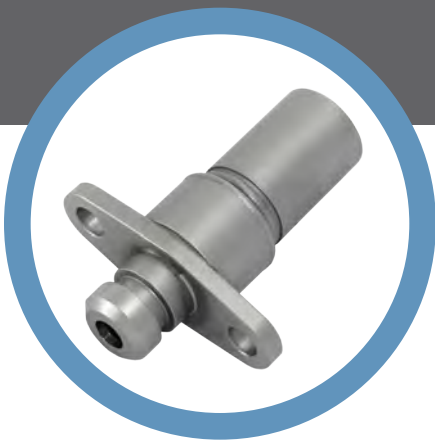
INTRODUCTION

Sensata motor protection for aircraft prevents hazards beyond the control of the manufacturer — hazards such as sustained overload and excessive temperatures. Since the protecting devices are sensitive to both temperature and current they inherently protect against a variety of abnormal conditions while allowing maximum motor output before shutdown. Motor life is extended by limiting the damaging temperatures to a designed level.

The Klixon® ACMP is basically a bimetallic thermostat with a built-in heating element which is installed in series with the motor winding. The actuating element is a Klixon® snap-acting thermal disc. The built-in heaters simulate winding temperatures caused by increases in current. This protector provides crisp, positive switching when the specified trip current is sustained for a specific duration at room temperature. The device will also actuate when an excessive ambient temperature condition occurs, providing protection against overheat conditions other than overload. Separately, the disc protects against excessive ambient temperature and the heaters protect against excessive current increases (as experienced during locked motor conditions). Together, the heaters and disc protect against any combination of overload and ambient conditions.

Inherent protection means that a protector is built into a motor and becomes an integral part of the system. For this reason, Klixon® protectors should only be applied by the motor manufacturer after detailed application tests to determine the heating characteristics of the motor under a full range of load and ambient conditions to verify the selected rating will meet the specific application requirements. Consult a sales correspondent at left for test samples.

SPECIFICATIONS		
Part Number	28VDC	120VAC
SKA	16 amps	16 amps
MKA	50 amps	50 amps
KA	100 amps	100 amps
SJE	30 amps	30 amps
MJE	60 amps	60 amps
BJE	120 amps	120 amps



KLIXON® | 6PS Series

Hermetic Stainless Steel Pressure Switch

FEATURES

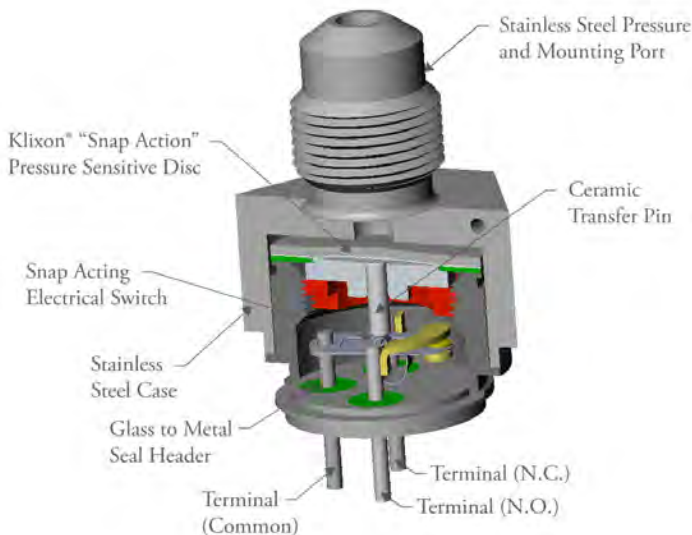
- Hermetically sealed per MIL-E-5400 paragraph 6.3.10
- Covers actuation range of 45 to 700 PSIA
- Maximum corrosion resistance under hostile conditions
 - 300 series stainless steel construction for all environment exposed parts
 - Stainless steel and brass construction for media exposed parts
- High vibration resistance
- 8000 psi minimum burst pressure
- SPDT switch configuration
- Available in a wide range of standard and custom configurations

INTRODUCTION

The Klixon® 6PS series precision pressure switches are snap-acting, all-welded devices with hermetically sealed switch contacts. Our pressure switches were developed for applications in aerospace and electronics where high reliability and/or resistance to severe environments is required. To ensure maximum corrosion resistance under hostile conditions, all parts exposed to the pressure media and the environment are made of brass or 300 series stainless steel — no rubber parts are used.

Small and lightweight, 6PS Series switches can be mounted by their pressure ports alone, allowing maximum flexibility of design. Full contact force is maintained even during high shock and vibration—regardless of applied pressure—because the positive, snap-action disc works in tandem with snap-action switch contacts.

There are over 1,000 existing 6PS switch package designs. The 6PS is ideal for highly customized package and performance needs.



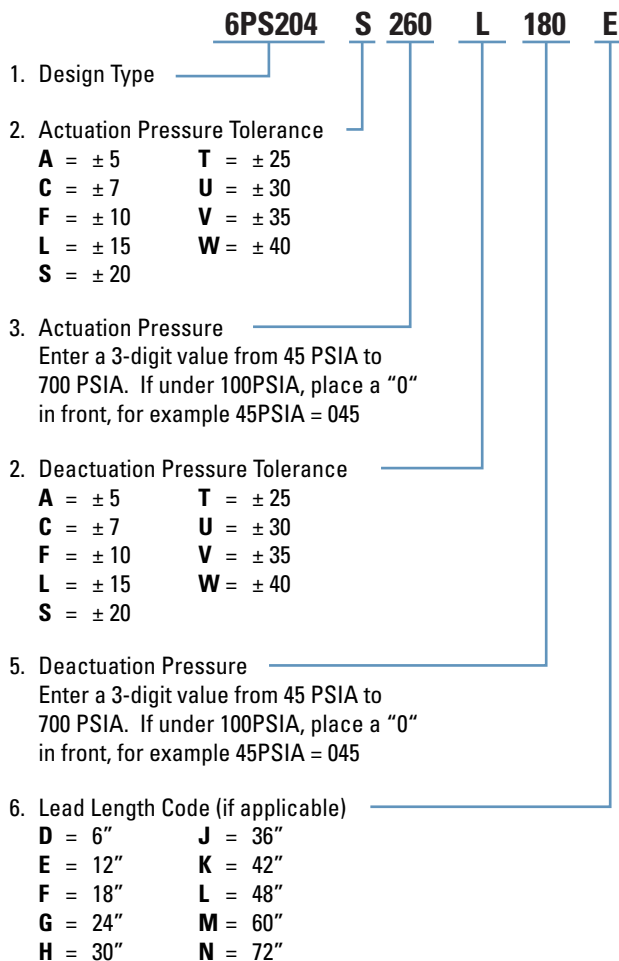
PRESSURE SPECIFICATIONS	
Range of Actuation Pressure Settings	at STP from 45 PSIA to 700 PSIA
Range of Deactuation Pressure Settings	Standard : 60% to 85% of actuation pressure Special : 85% to 90% of actuation pressure
Range of Tolerances on Actuation & Deactuation Pressure	Standard : up to ±6% of actuation pressure (±10 PSI minimum) Special : up to ±4% of actuation pressure (±5 PSI minimum) <i>Choice of deactuation pressure setting and tolerances affects price</i>

SPECIFICATIONS	
Temperature Rating	-54°C to +135°C (-65°F to 275°F)
Vibration Resistance	25 G, 20–2000 cps (no contact chatter in excess of 10 microseconds)
Burst Pressure	8,000 PSI minimum
Proof Pressure	8 times actuating pressure
Life @ Rated Current	50,000 cycles
Current Capacity	Resistive : 5amp @ 28 VDC Inductive : 2amp @ 28 VDC Lamp : 1amp @ 28 VDC
Dielectric Strength	Terminal to terminal : 1000 vrms Terminal to case : 1000 vrms
Weight	Without Leads : 30 grams max With Connector : 60 grams max
Metal Parts Exposed to Pressure & Environment	300 series stainless steel CA-360-2 (1/2 hard leaded brass)
Potting Material	Epoxy resin

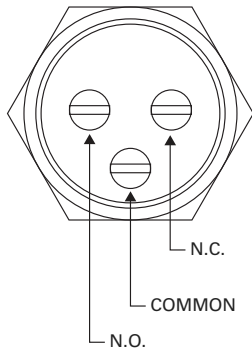
See pressure table for standard tolerances for the actuation and deactuation pressures. Note, after building a part number, consult the factory for pricing and to confirm pressure specifications are valid.

Actuation Pressure (PSIA)			Deactuation Pressure (PSIA)			
Pressure	Standard Tolerance	Special Tolerance	Standard 60% to 85%	Special 85% to 90%	Standard Tolerance	Special Tolerance
45 to 134	± 10	± 5	28 to 112	40 to 117	± 10	± 5
135 to 164	± 10	± 7	83 to 137	117 to 144	± 10	± 7
165 to 249	± 15	± 10	101 to 208	142 to 216	± 15	± 10
250 to 369	± 20	± 15	153 to 310	217 to 324	± 20	± 15
370 to 429	± 25	± 20	225 to 361	319 to 378	± 25	± 20
430 to 489	± 30	± 20	261 to 412	370 to 432	± 30	± 20
490 to 549	± 35	± 25	297 to 463	421 to 486	± 35	± 25
550 to 599	± 40	± 25	333 to 510	472 to 540	± 40	± 25
600 to 700	Consult Factory					

6PS PART NUMBER BUILDER

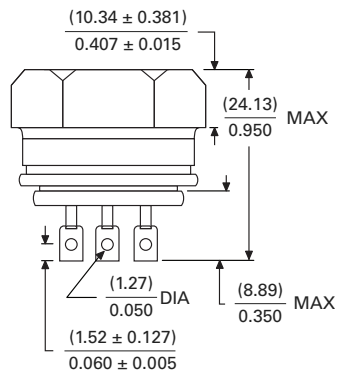


6PS SERIES - DESIGN TYPE

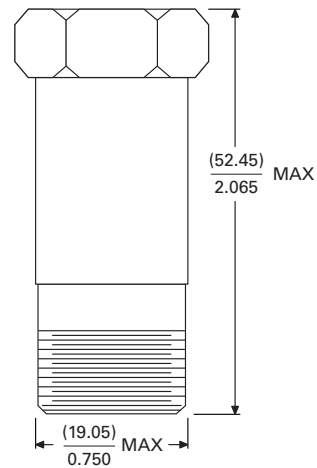


Lockwire holes are $.047 \pm .006$ [$1.19 \pm .15$] diameter. Located $.050 \pm .008$ [$1.27 \pm .20$] from port face of hex

FLATTENED & PIERCED TERMINALS

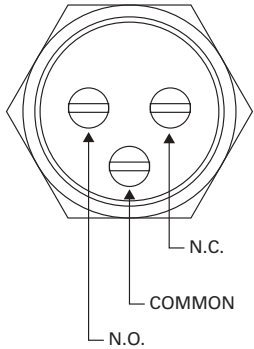


MS33678-10SL-3P (SPDT) IS33678-10SL-4P (SPST NC/NO)



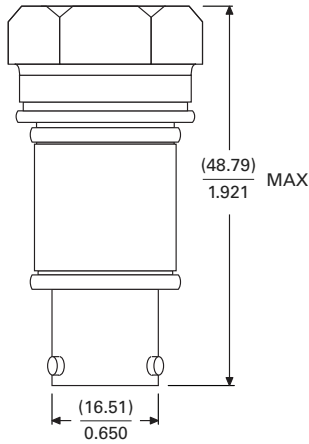
		SPDT	SPDT	SPDT	SPDT	SPST	SPST
1/8" OD Tubing MS 33656 -E2		6PS100 without lock-wire holes	6PS150 with lock-wire holes	6PS102 without lock-wire holes	6PS152 with lock-wire holes	6PS103 without lock-wire holes	6PS153 with lock-wire holes
3/16" OD Tubing MS 33656 -E3		6PS200 without lock-wire holes	6PS250 with lock-wire holes	6PS202 without lock-wire holes	6PS252 with lock-wire holes	6PS203 without lock-wire holes	6PS253 with lock-wire holes
1/4" OD Tubing MS 33656 -E4		6PS300 without lock-wire holes	6PS350 with lock-wire holes	6PS302 without lock-wire holes	6PS352 with lock-wire holes	6PS303 without lock-wire holes	6PS353 with lock-wire holes
5/16" OD Tubing MS 33656 -E5		6PS400 without lock-wire holes	6PS450 with lock-wire holes	6PS402 without lock-wire holes	6PS452 with lock-wire holes	6PS403 without lock-wire holes	6PS453 with lock-wire holes
3/8" OD Tubing MS 33656 -E6		6PS500 without lock-wire holes	6PS550 with lock-wire holes	6PS502 without lock-wire holes	6PS552 with lock-wire holes	6PS503 without lock-wire holes	6PS553 with lock-wire holes
1/8" Pipe Fitting MS 33677		6PS600 without lock-wire holes	6PS650 with lock-wire holes	6PS602 without lock-wire holes	6PS652 with lock-wire holes	6PS603 without lock-wire holes	6PS653 with lock-wire holes
1/4" Pipe Fitting MS 33677		6PS700 without lock-wire holes	6PS750 with lock-wire holes	6PS702 without lock-wire holes	6PS752 with lock-wire holes	6PS703 without lock-wire holes	6PS753 with lock-wire holes

6PS SERIES - DESIGN TYPE

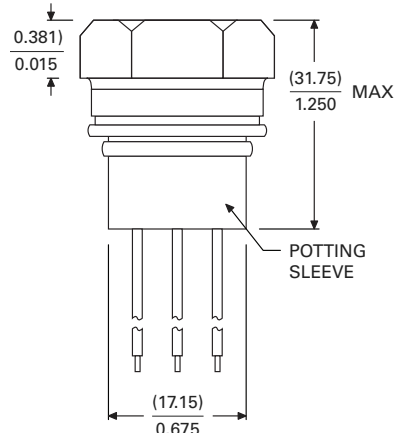


Lockwire holes are $.047 \pm .006$ [1.19 \pm .15] diameter. Located $.050 \pm .008$ [1.27 \pm .20] from port face of hex

PT1H-8-3P CONNECTOR



POTTED LEADS



		SPST	SPST	SPDT	SPDT	SPST (NC)	SPST (NC)	SPST (NO)	SPST (NO)
1/8" OD Tubing MS 33656 -E2		6PS104 without lock-wire holes	6PS154 with lock-wire holes	6PS101 without lock-wire holes	6PS151 with lock-wire holes	6PS105 without lock-wire holes	6PS155 with lock-wire holes	6PS106 without lock-wire holes	6PS156 with lock-wire holes
3/16" OD Tubing MS 33656 -E3		6PS204 without lock-wire holes	6PS254 with lock-wire holes	6PS201 without lock-wire holes	6PS251 with lock-wire holes	6PS205 without lock-wire holes	6PS255 with lock-wire holes	6PS206 without lock-wire holes	6PS256 with lock-wire holes
1/4" OD Tubing MS 33656 -E4		6PS304 without lock-wire holes	6PS354 with lock-wire holes	6PS301 without lock-wire holes	6PS351 with lock-wire holes	6PS305 without lock-wire holes	6PS355 with lock-wire holes	6PS306 without lock-wire holes	6PS356 with lock-wire holes
5/16" OD Tubing MS 33656 -E5		6PS404 without lock-wire holes	6PS454 with lock-wire holes	6PS401 without lock-wire holes	6PS451 with lock-wire holes	6PS405 without lock-wire holes	6PS455 with lock-wire holes	6PS406 without lock-wire holes	6PS456 with lock-wire holes
3/8" OD Tubing MS 33656 -E6		6PS504 without lock-wire holes	6PS554 with lock-wire holes	6PS501 without lock-wire holes	6PS551 with lock-wire holes	6PS505 without lock-wire holes	6PS555 with lock-wire holes	6PS506 without lock-wire holes	6PS556 with lock-wire holes
1/8" Pipe Fitting MS 33677		6PS604 without lock-wire holes	6PS654 with lock-wire holes	6PS601 without lock-wire holes	6PS651 with lock-wire holes	6PS605 without lock-wire holes	6PS655 with lock-wire holes	6PS606 without lock-wire holes	6PS656 with lock-wire holes
1/4" Pipe Fitting MS 33677		6PS704 without lock-wire holes	6PS754 with lock-wire holes	6PS701 without lock-wire holes	6PS751 with lock-wire holes	6PS705 without lock-wire holes	6PS755 with lock-wire holes	6PS706 without lock-wire holes	6PS756 with lock-wire holes

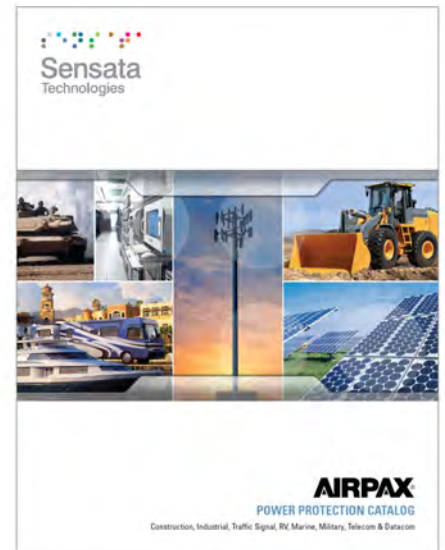
OTHER SENSATA CATALOGS THAT MAY INTEREST YOU:



Klixon™ Thermal Circuit Breakers
Literature PN 2455009001



Klixon™ Aircraft Circuit Breakers
Literature PN 2455009002



Airpax™ Power Protection Catalog
Literature PN 2455005000

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