

Figure 7. 3100 Series Hermetic Thermostats


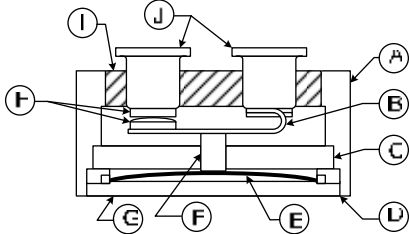
	
<p>The 3100 Series is a single-pole, single-throw switch activated by a snap-action bimetal disc. The case is laser welded to form a hermetically-sealed steel housing, with a glass-to-metal seal at the terminal junction. Temperature calibrations are pre-set at the factory. Each unit is thermally and mechanically inspected and tamperproof. They are available to open or close on temperature rise. A variety of mounting brackets and terminals is available.</p> <p>Preconfigured REDI-TEMP versions are available. See page 34.</p>	<p>A Housing B Contact arm C Ceramic insulator D Laser weld E Bimetal disc F Ceramic transfer pin G Cap H Contacts I Glass header J Terminals</p> <p>3100 120 Vac max.: Not UL/CSA approved. 3100U 240 V: UL/CSA approved. 3100UX: UL/CSA approved.</p> <p>Potential applications include high temperature control for:</p> <ul style="list-style-type: none"> • Office equipment • Computers • Aircraft • Electronic controls

Table 17. 3100 Series Standard Temperature Characteristics

Operating Temperature Range	Tolerance		Standard Mean Differential °C [°F]	Optional Max. Differential °C [°F]
	Open °C [°F]	Close °C [°F]		
-28,89 °C to -12,2 °C [-20 °F to 10 °F]	±5,6 [±10]	±4,4 [±8]	16,7 to 22, 2 [30 to 40]	-
	±4,4 [±8]	±4,4 [±8]	11,1 to 16,1 [20 to 29]	-
	±3,9 [±7]	±3,9 [±7]	7,8 to 10,6 [14 to 19]	-
	±3,3 [±6]	-	-	4,4 [8]
	-	±3,3 [±6]	-	4,4 [8]
-11,7 °C to 93,3 °C [11 °F to 200 °F]	±2,8 [±5]	±2,8 [±5]	11,1 to 44,4 [20 to 80]	-
	±2,8 [±5]	±2,8 [±5]	8,3 to 10,6 [15 to 19]	-
	±2,8 [±5]	±2,8 [±5]	5,6 to 7,8 [10 to 14]	-
	±2,2 [±4]	-	-	4,4 [8]
	-	±2,2 [±4]	-	4,4 [8]
	±1,7 [±3]	-	-	3,3 [6]
93,9 °C to 148,9 °C [201 °F to 300 °F]	±4,4 [±8]	±3,3 [±6]	13,9 to 44,4 [25 to 80]	-
	±3,9 [±7]	±3,3 [±6]	8,3 to 13,3 [15 to 24]	-
	±3,3 [±6]	±3,3 [±6]	6,7 to 7,8 [12 to 14]	-
	±2,8 [±5]	±2,8 [±5]	5,6 to 7,8 [10 to 14]	-
	±2,2 [±4]	-	-	4,4 [8]
	-	±2,2 [±4]	-	4,4 [8]
149,4 °C to 176,7 °C [301 °F to 350 °F]	±6,7 [±12]	±5,6 [±10]	19,4 to 44,4 [35 to 80]	-
	±5,6 [±10]	±5,6 [±10]	13,9 to 18,9 [25 to 34]	-
	±4,4 [±8]	±4,4 [±8]	8,9 to 13,3 [16 to 24]	-
	±3,9 [±7]	±3,9 [±7]	7,8 to 10,0 [14 to 18]	-
	±2,8 [±5]	-	-	5,6 [10]
	-	±2,8 [±5]	-	5,6 [10]
177,2 °C to 204,4 °C [351 °F to 400 °F]	±8,3 [±15]	±8,3 [±15]	22,2 to 55,6 [40 to 100]	-
	±8,3 [±15]	±6,7 [±12]	16,7 to 21,7 [30 to 39]	-
	±5,6 [±10]	±5,6 [±10]	11,1 to 16,1 [20 to 29]	-
	±4,4 [±8]	±4,4 [±8]	8,9 to 10,6 [16 to 19]	-
	±3,3 [±6]	-	-	8,3 [15]
205 °C to 232,20 °C [401 °F to 450 °F]	±11,1 [±20]	±8,3 [±15]	22,2 to 55,6 [40 to 100]	-
	±13,9 [±25]	±13,9 [±25]	33,3 to 66,7 [60 to 120]	-

Table 18. 3100 Series Specifications

Characteristic	Parameter
Switch type	SPST
Reset type	automatic
Amperage	see Tables 19, 20, 21
Voltage	30 Vac/dc
Operating temperature range	-28,89 °C to 260 °C [-20 °F to 500 °F]
Environmental exposure range	-62 °C to 288 °C [-80 °F to 550 °F]
Dielectric strength	3100 and 3100U: MIL-STD-202 Method 301 – 1250 Vac, 60 Hz terminal to case 3100UX: MIL-STD-202 Method 301 – 1500 Vac, 60 Hz terminal to case
Insulation Resistance	MIL-STD-202 Method 302 Cond. B – 50 MOhm, 500 Vdc applied
Contact Resistance	MIL-STD-202, Method 307 – 50 mOhm
Hermetic seal	MIL-STD-202, Method 112 Cond. 1x10 ⁵ Atm cc/sec
Moisture resistance	MIL-STD-202, Method 106
Housing material:	
Base	cold rolled plated steel
Contacts	silver
Terminals	nickel/iron alloy
Closure	hermetically sealed
Brackets	cold rolled plated steel
Plating	copper/nickel QQ-N-290
Marking	Mil-STD-1285
Approvals	3100U: UL File E36103; CSA File LR21048
Weight	5,5 g [0.19 oz] (brackets and wire leads not included)

Table 19. 3100 Contact Ratings

Life Cycles	30 Vac/dc	120 Vac	240 Vac
5,000	7 A	6 A	3 A
10,000	6.5 A	5 A	2.5 A
25,000	6 A	4 A	2 A
50,000	5.5 A	3 A	1.5 A
100,000	5 A	2 A	1 A

Table 20. 3100U Contact Ratings

Life Cycles	120 Vac
6,000	6 A
6,000	1/10 hp
100,000	3 A
30,000	3 A
100,000	100 mA

Table 21. 3100UX Contact Ratings

Life Cycles	240 Vac
6,000	1.5 A
6,000	-
100,000	1.1025 A
30,000	-
100,000	-