

## Thermal Switches — continued

### Bi-Metallic, Auto Reset, High Temperature

#### MICROTHERM



H = 21 (overall), W = 31, D = 19  
Fixing centres = 24, (holes M3)

- Automatically re-setting thermal switches with snap-action bi-metallic SPST contacts
- Contacts are normally closed, and are isolated from the mounting base
- Range of switching temperatures from 170°C to 250°C
- Approvals: **UL** and **CSA** (22N,52N), **VDE0631** (22N), **DIN EN** (52N)
- Indication of switch temperature is given on base of switch

Contact rating 10A 250V ac, 15A 125V ac (100,000 cycles) (UL/CSA)  
Connections 6.3 0.8 (1/4") spade terminals  
Body material Ryton (upto 200°C), Ceramic (upto 250°C)

Note: 200°C rated switch available in both materials. Ceramic will withstand a greater degree of temperature overshoot

Opening Temp.	Reclosing Temp.	Body Material	Mftrs List No.	Order Code
170°C±5°C	140°C±10°	Ryton	22N151044(170/140)	732-436
200°C±8°C	160°C±8°C	Ryton	22N151044(200/160)	732-448
200°C±10°C	160°C±15°C	Ceramic	52N12T044(200/160)	732-450
225°C±10°C	175°C±15°C	Ceramic	52N12T044(225/175)	732-461
250°C±10°C	200°C±20°C	Ceramic	03CN12T044(250/200)	732-473

SEN318

Type	Body	Order Code	Price Each			
			1+	25+	100+	250+
170°C	Ryton	732-436				
200°C	Ryton	732-448				
200°C	Ceramic	732-450				
225°C	Ceramic	732-461				
250°C	Ceramic	732-473				

### Bi-Metallic, Manual Reset

#### MICROTHERM



- Snap-action bi-metallic SPST contacts are isolated from the mounting base
- Horizontal tab connections allow easy access to reset pin
- **UL** and **CSA** approvals

The switches are normally closed and open on temperature rise, then remain open until manually reset. Connection is by 6.3 0.8 (1/4") spade terminals.

Contact rating (UL/CSA) 10A 250Vac (10,000 cycles), 15A 120Vac (6,000 cycles)  
Contact material Silver alloy

Opening Temp.	Mftrs List No.	Order Code
40°C ±4°C	05N1034(40/M)	732-503
45°C ±4°C	05N1034(45/M)	732-515
55°C ±4°C	05N1034(55/M)	732-527
65°C ±4°C	05N1034(65/M)	732-539
80°C ±5°C	05N1034(80/M)	732-540
90°C ±5°C	05N1034(90/M)	732-552
100°C ±5°C	05N1034(100/M)	732-564
115°C ±5°C	05N1034(115/M)	732-576
130°C ±5°C	05N1034(130/M)	732-588
150°C ±5°C	05N1034(150/M)	732-590

SEN319

All Order Codes	Price Each				
	1+	10+	25+	100+	250+

### Bi-Metallic, Manual Reset

#### MICROTHERM



- Snap-action bi-metallic SPST contacts are isolated from mounting base
- Approvals include **VDE**, **UL**, **DEMKO**, **UTE**, **KEMA** and **EIL**

Contact rating 16A @ 250V ac  
Contact Material Fine Silver

H = 24.5, W = 36.2 (across terminals), W = 30.4 (across flange),  
D = 18.2, Fixing centres = 23.8 (hole dia. 3.7)

The switches are normally closed and open on temperature rise, then remain open until manually reset. Connection is by 1/4" (6.3 0.8mm) terminals.

Opening Temp.	Mftrs. List No.	Order Code
40°C ±3°C	R32-C156	732-485
45°C ±3°C	R32-C159	606-698
56°C ±3°C	R32-C166	253-996
67°C ±3°C	R32-C171	254-009
80°C ±3°C	R32-C177	254-010
90°C ±3°C	R32-C180	732-497
100°C ±3°C	R32-C184	254-022
112°C ±3.4°C	R32-C187	606-704
132°C ±4°C	R32-C192	254-034
150°C ±4.5°C	R32-C195	606-716

SEN104X

All Order Codes	Price Each			
	1+	10+	25+	100+

### Bi-Metallic, TO-220

#### AIRPAX



H = 30 (incl pins), W = 10.2,  
D = 4.6, Hole dia = 3.6,  
Pin spacing = 5.1

- Automatically resetting thermal switches with snap-action bi-metallic SPST contacts
- High temperature epoxy sealed TO-220 package
- Ideal for PC boards, direct mounting on heatsinks etc.
- **UL** recognised, **CSA** certified

The switches are available as either normally closed (opening on temperature rise) or normally open (closing on temperature rise).

Contact rating 1A @ 120V ac, 48V dc, (30,000 operations)  
20mA (down to 1mA) @ 5V dc (100,000 operations)  
Contact material Gold-plated silver cross-bar

#### Normally Closed Types

Opening Temp. (±5°C)	Reclosing Temp. (min)	Differential (min.)	Mftrs. List No.	Order Code
50°C	30°C	4°C	67L050	178-799
70°C	50°C	4°C	67L070	212-829
80°C	55°C	6°C	67L080	178-801
90°C	60°C	6°C	67L090	178-802
100°C	70°C	6°C	67L100	178-803
110°C	80°C	6°C	67L110	279-791

#### Normally Open Types

Closing Temp. (±5°C)	Reopening Temp. (min)	Differential (min.)	Mftrs. List No.	Order Code
50°C	30°C	4°C	67F050	178-804
70°C	50°C	4°C	67F070	178-805
90°C	60°C	6°C	67F090	178-806
110°C	80°C	6°C	67F110	279-808

Example: A 212-829 thermal switch will open (break contact) on a rising temperature between 65°C and 75°C and will reset (make contact) on a falling temperature no less than 4°C lower than the actual opening temperature and no lower than 50°C.

SEN13X

All Order Codes	Price Each			
	1+	25+	100+	250+

### Bi-Metallic, Insulated

#### MICROTHERM



- Suitable for over-temperature protection and temperature control in a wide range of electrical and electronic equipment
- Approved to **VDE**, **UL**, **CSA**, **OVE**, **SEMKO** and **BEAB**

Normally closed bi-metal thermal cut-outs fully insulated with an epoxy coating.

H = 14.0, W = 10.0, D = 6.0, Lead L = 100

Voltage rating 250V ac  
Current rating resistive 2.5A cos φ = 1.0  
inductive 1.6A cos φ = 0.6  
Sealing insulation 160°C type = polyolefin (blue)  
other types = textile/lacquer (yellow)

Mftrs. List Nos: T11V 100 05U200 = 152-227, T11V 110 05U200 = 152-228,  
T11V 125 05U200 = 152-229, T11V 140 05U200 = 152-230,  
T11V 150 05U200 = 606-728, T11V 070 05U200 = 732-606,  
T11V 080 05U200 = 732-618, T11V 160 05U200 = 732-620

SEN118X

Opening Temperature	Order Code	Price Each			
		1+	25+	50+	100+
70°C	732-606				
80°C	732-618				
100°C	152-227				
110°C	152-228				
125°C	152-229				
140°C	152-230				
150°C	606-728				
160°C	732-620				

### Solid State

#### MICROTHERM



- Very specific transition region
- High sensitivity and reliability
- Low noise and low shunt capacitance
- TO-18 housing with choice of mounting tab style

Lead L = 12.7  
Lead spacing = 2.54 Hole dia = 3.5

Mounting tab style B3 L = 14, W = 6.5, H = 4.2  
Mounting tab style C3 L = 5.5, W = 6.5, H = 14