

M2 Series

Narrow Differential Welded, Hermetic Seal

- Snap-action switching
- Single pole, single throw
- Preset, non-adjustable calibration
- Welded, hermetic seal and backfilled with nitrogen
- Normally open or normally closed
- Qualified to MIL-S-24236 / 20 (order by MS number)
- GAM-T1



Actual size



M2 thermostats are recommended for use as controls and warning devices in guided missiles, aircraft controls, heating blankets, electronic circuit components, servomechanisms, gyroscopes, aerial cameras, crystal ovens, surface heaters, computers and similar electronic devices where reliable performance is vital.

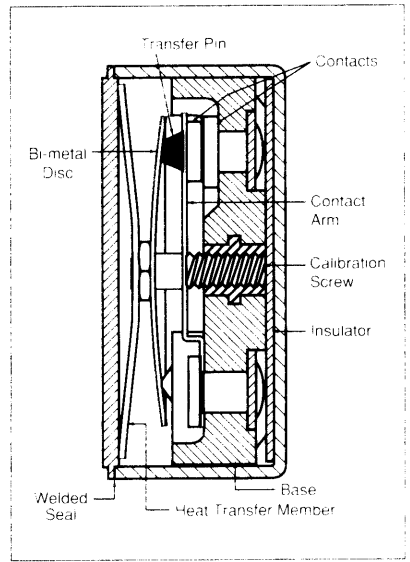
Precision temperature accuracy and long life reliability are achieved through the use of the well known Klaxon snap-acting disc. This unique mechanism multiplies the motion of the

temperature sensor and actuates a switch capable of handling high power. Welded closed after accurate calibration, the M2 is tamperproof.

The M2 is available with a variety of terminals and can be mounted in any position: through openings in metal closures, in casting wells, in ducts for control of air temperature. A surface mounting bracket or stud can be provided.

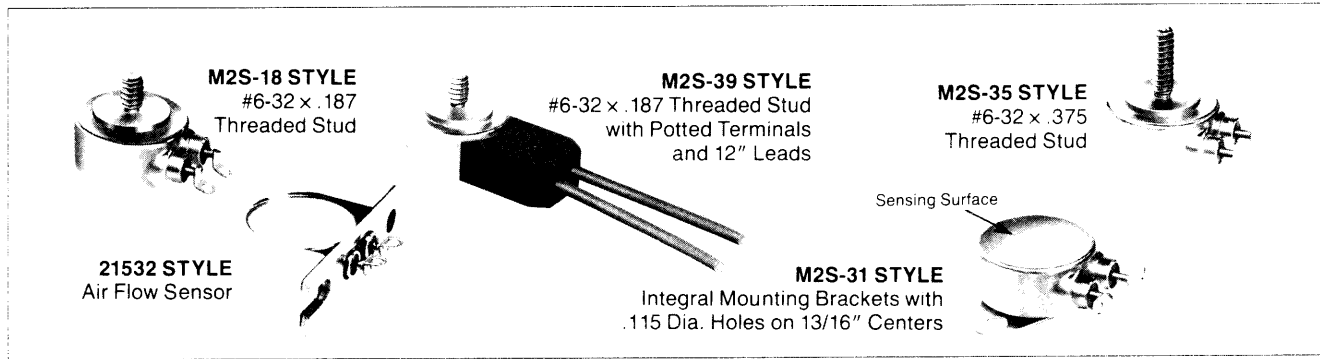
TI's years of engineering experience have yielded a wide variety of easy to use mounting means.

Typical Cross Section View



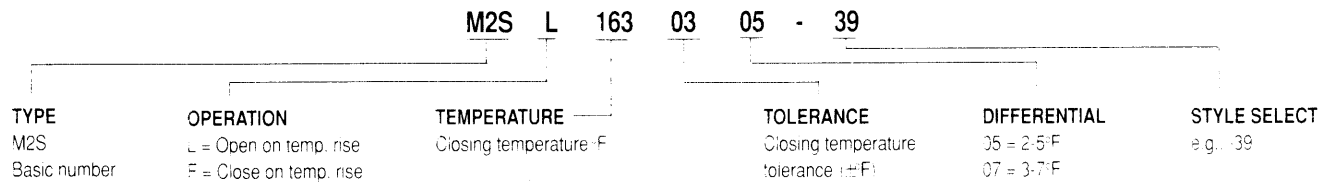
Special M2 Thermostats

Many configurations are available beyond the standard units shown above. Several varieties are shown below. The device can easily be custom designed into packages such as probe thermostats or strap mounted units.



Part Numbering System for Special M2 Thermostats

To facilitate the ordering of M2 thermostats to your specifications use the part number code below. The code permits you to call out a complete production part number at the time of component selection.



Military

Performance Characteristics

Switch Action

SPST, normally open or normally closed

Contact Ratings (Resistive)

| Voltage | 30 VDC | 120 VAC | Cycles |
|---------|--------|---------|---------|
| Amperes | 2.0 | 2.0 | 250,000 |

Based on standard differential

Contact Resistance

0.050 ohms maximum,
per MIL-STD-202, Method 307

Dielectric Strength

1250 VAC, rms,
60 cycles for 1 minute,
per MIL-STD-202, Method 301

Vibration Resistance

10-2000 Hz, 10G,
per MIL-STD-202, Method 204,
Condition D, (monitored)
10 microseconds chatter, max.
50G (unmonitored)
20-2000 Hz (open contacts)

Shock Resistance

100 G, 6 milliseconds,
per MIL-STD-202, Method 213
(monitored) 10 microseconds
chatter, max.

Hermeticity

1 X 10⁻⁶ atm cc/sec. max.,
per MIL-STD-202, Method 112,
Condition C

Salt Spray

per MIL-STD-202, Method 101,
Condition B, 5% solution

Weight (Average)

5.4 grams

Ambient Temperature Range

-65°F to 400°F (depending on calibrated temperature). Exposure is limited to 100°F above operating temperature for close on rise devices or 100°F below operating temperature for open on rise devices.

Temperature Settings

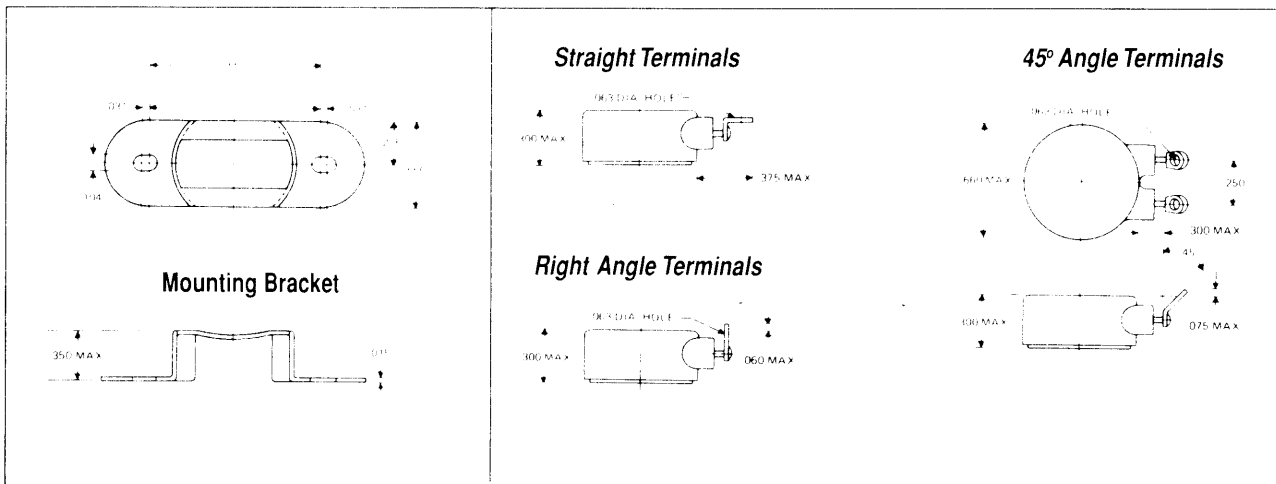
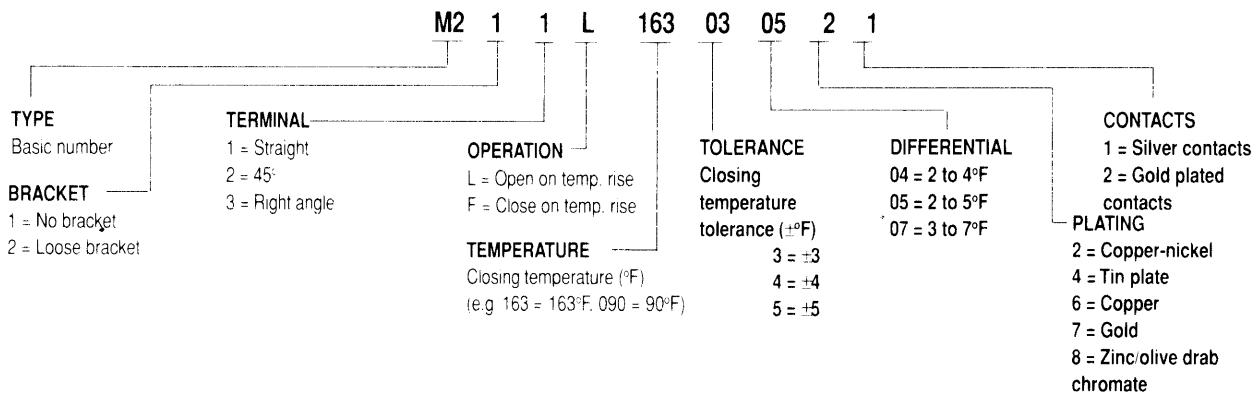
| Closing Temperature Range (°F) | Opening Temperature Differential (°F) | Closing Temperature Tol. (°F) | |
|--------------------------------|---------------------------------------|-------------------------------|----------------|
| | | Std. | Spec. |
| 0 to 250 (-17 to 121 C) | 2 - 5 (1.1 to 2.8 C) | ±4 (±2.2 C) | ±3 (±1.7 C) |
| 251 to 300 (122 to 149 C) | 3 - 7 (1.7 to 3.9 C) | ±5 (±2.8 C) | ±4 (±2.2 C) |

The M2 thermostat is ordered by specifying the closing temperature with tolerance and the opening temperature in terms of a differential range, either above or below the actual closing temperature.

Example: Close at 100°F ±4, open 2-5°F above. In any one lot, the thermostats will close between 96 and 104°F. Each thermostat will open 2-5°F above the actual closing temperature of that thermostat.

Part Numbering System for Standard M2 Thermostat

To facilitate the ordering of M2 thermostats to your specifications use the part number code below. The code permits you to call out a complete production part number at the time of component selection.



Thermostats should not be subjected to temperature overrides in excess of 100°F in the closed position. Dimensions shown in inches.