

## 500 Series Thermal Switches

### *Commercial and Military*

Honeywell's 500 Series switches are ideally suited for applications where exceptional reliability, rapid temperature response, and consistently high quality are key requirements. They may be used to control, indicate or limit a variety of temperature functions.

These single pole, single throw switches are hermetically sealed using all-welded construction. A calibrated bimetal, snap-acting disc provides the energy to open and close electrical contacts at pre-specified temperature settings.

The 500 Series switches are manufactured in a controlled environment with temperature setpoints tested by a computer to assure accuracy and uniformity. The discs are 100% tested prior to assembly,

Nine standard mounting configurations are available. They are easily adaptable for special designs in industrial, aeronautic, and military applications, and are qualified to MIL-PRF-24236/1.

### **Application Examples**

- Electronics compartment temperature control
- Industrial bath temperature control
- Gyro/accelerometer system temperature control
- Duct air temperature control
- Motor overheat protection
- Hydraulic pump/system overheat protection
- Bearing overheat warning
- Gearbox overheat warning
- Battery charge rate and overtemp control
- Heatsink overtemp warning
- Surface and strip heater control



### **Features**

- All welded hermetic construction
- Operating temperatures available from -65°F to +350°F
- High vibration resistance
- High and low current capability
- Crisp SPST contact operation
- Fast response to thermal changes
- Lightweight and rugged
- Backfilled with dry Nitrogen gas containing 10% Helium trace
- Tested to 63.5g rms random vibration levels
- Special materials and finishes can be provided
- Custom units available to over +600°F
- Non-standard tolerances available upon request
- Additional configurations available (consult factory)

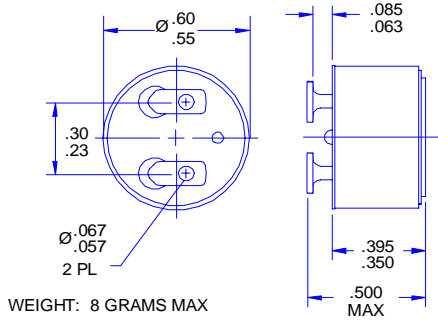
### **Custom Features**

- Special terminal configurations, plating, overmolds and lead wires are available (consult factory).
- Unusual temperature ranges and setpoint tolerances available (consult factory).
- Special identification requirements.
- Custom shapes, assemblies, materials and finishes can be provided.

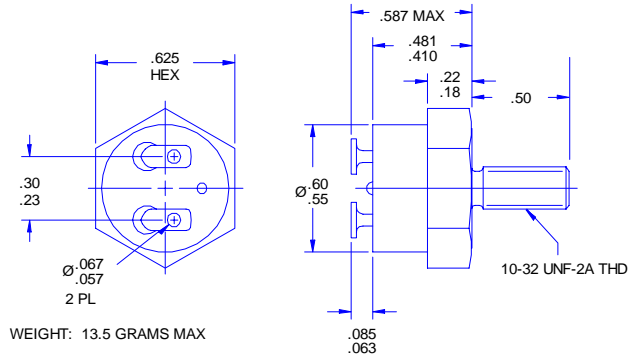
# Configuration Drawings (dimensions in inches)

All configurations shown are available with upright terminals

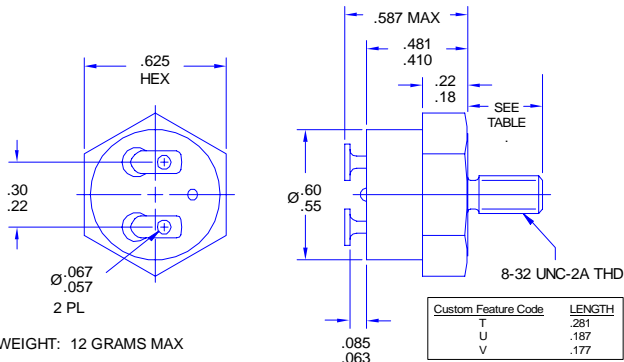
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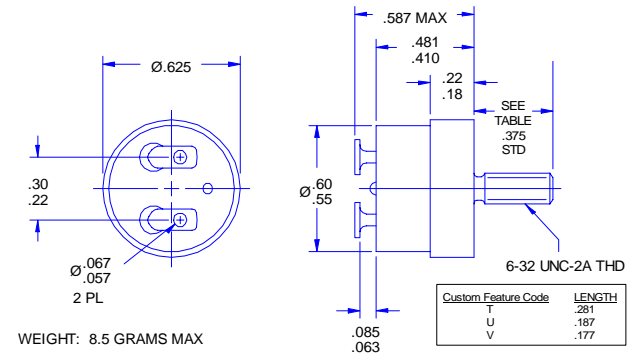
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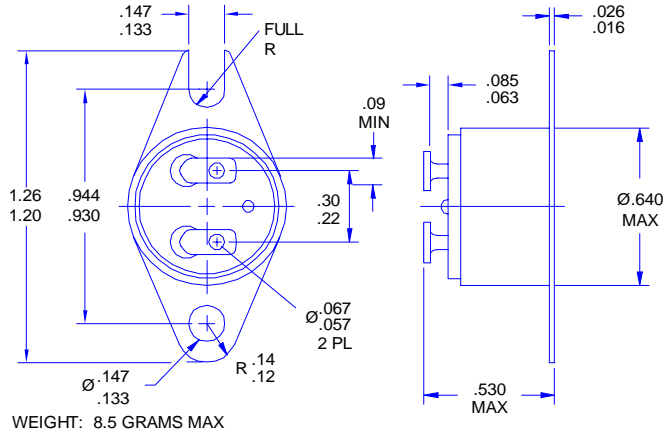
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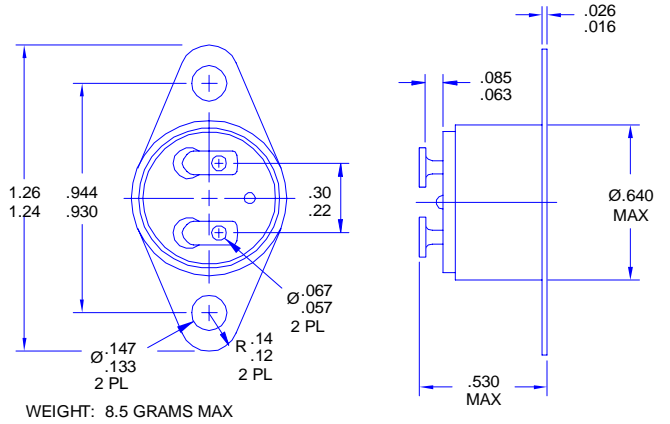
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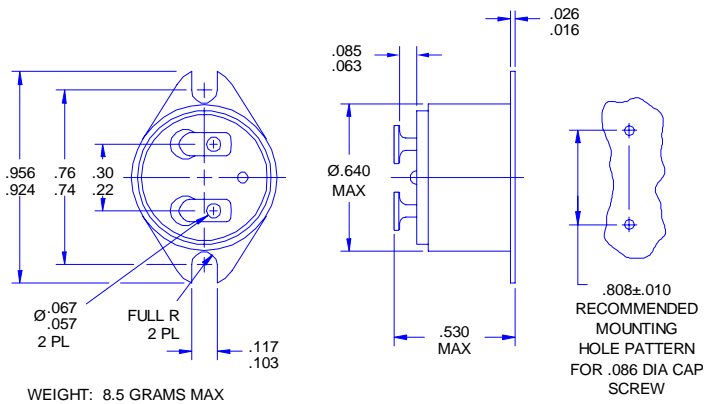
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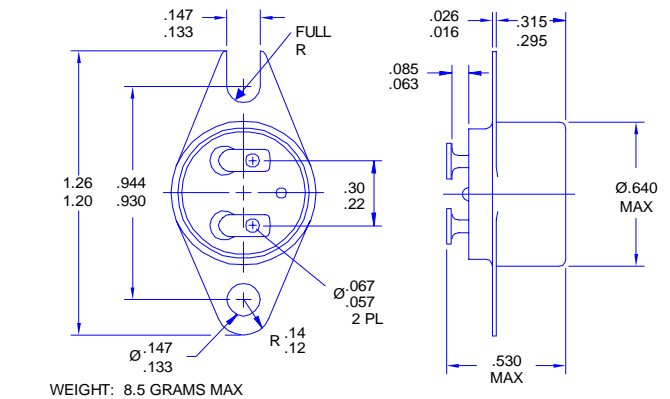
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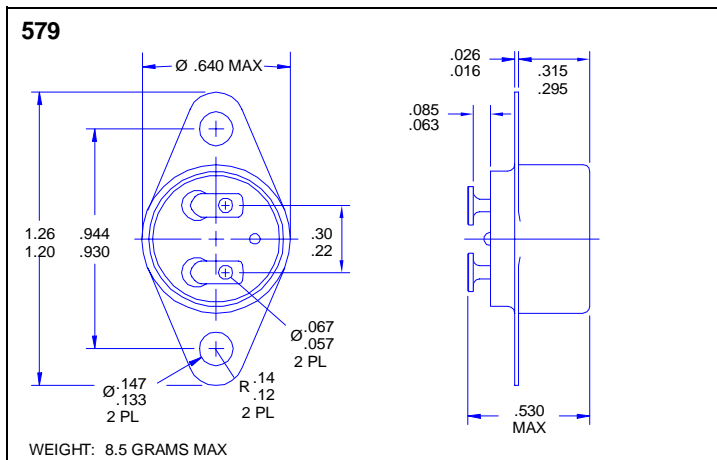


**578**



## Configuration Drawings (dimensions in inches)

All configurations shown are available with upright terminals



## Specifications for 500 Series Thermal Switch

### Performance Characteristics

Contact Arrangement:	SPST
Contact Ratings:	5 amps resistive load at 28 VDC 2 amps resistive load at 115 VAC RMS 1.0 amp inductive load (L/R 0.02) at 28 VDC
Contact Resistance:	20 milliohms maximum
Endurance	100,000 cycles minimum at rated DC or AC load
Dielectric Withstanding Voltage:	1500 VAC RMS - terminals to case, 500 microamperes maximum leakage
Insulation Resistance	500 megohms minimum at 500 VDC

### Environmental (MIL-STD-202)

Vibration (Sine):	Method 204, 50g to 2000 Hz, 30g to 2000 Hz
Vibration (Random):	Method 204, over 60g RMS, 20 to 2000 Hz
Shock:	Method 213, 100g/6ms, 750g/0.5ms
Thermal Shock:	Method 107, Condition B, -85° to +257°F (-65°C to 125°C)
Acceleration:	Method 212, Condition A, 30g
Salt Spray:	Method 101, Condition B, 48 hours
Moisture Resistance:	Method 106, 240 hours, 90 - 98% RH and from +77°F to +149°F (+25°C to 65°C)
Hermetic Seal:	Method 112, Condition C, Procedure IV

NOTE: The 500 Series thermal switches have been qualified to the requirements of Military Specification MIL-PRF-24236, titled "Switches, Thermostatic, General Specification For"

**Tolerance Limits**  
(Consult Factory for Non-Standard Limits)

Specified Temp Setpoint Range °F (°C)	Standard Setpoint Tolerance °F (°C)
-65 to 0 (-54 to -18)	±6 (±3.3)
+1 to 250 (-17 to 121)	±5 (±2.8)
251 to 350 (122 to 177)	±7 (±3.9)

Lower, upper and minimum differential temperature tolerance may be reflected as  
**CLOSE TOLERANCE / OPEN TOLERANCE / DIFFERENTIAL.**

EXAMPLE: /5/5/7 where Close Tolerance = ±5°, Open Tolerance = ±5°F, Differential = 7°F min.

**Sample Ordering Code**

Once written, your ordering code becomes the specific part number, as this example illustrates:

	1	2	3	UNIT # 4	5	6	7
	571	T	150	A	160	XX	
Configuration shown in drawing							
T = Tin plate finish							
Lower temperature setpoint at 150°F ±5°F							
A = Open on temperature rise B = Close on temperature rise							
Upper temperature setpoint at 160°F ±5°F							
Custom features and temperature tolerances (consult factory)							
Configuration Modifiers (consult factory)							

Find out more:  
[www.thermalswitch.com](http://www.thermalswitch.com)

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