

THERMOSTAT PROBE PACKAGES: NARROW DIFFERENTIAL CONTROL



Introduction

Klixon® Narrow Differential Control thermostat probes are designed to provide reliable, consistent performance over a long cycle life in the harshest environments. These probes provide accurately open and close with a narrow 2°F to 8°F differential, providing tight temperature control. Based on the M2 Series thermostat, these devices have outstanding vibration and shock resistance, with a temperature range from 0°F to 240°F. These characteristics enable users to closely control the temperature in applications like aircraft environmental control systems or travelling wave tube (TWT) coolant systems.

Features

- Hermetically Sealed (probe only)
- Narrow differential between open and close set points
- Snap-action switching
- Pre-set, non-adjustable calibration
- High resistance to shock and vibration
- Qualified to MIL-PRF-24236/25

PERFORMANCE

The standard narrow differential probe utilizes silver contacts. Gold plated contacts can be furnished to assure reliable circuit switching under low wattage conditions. *(See second table below.)*

Contact Ratings (Resistive)

Based on standard differential

30 VAC/DC	125 VAC	Life Cycles
2.0 Amps	2.0 Amps	250,000 cycles

Gold Contact Ratings (Resistive)

Based on standard differential

30 VAC/DC	500 mA and below
115 VAC	200 mA and below
230 VAC	100 mA and below



PERFORMANCE (CONTINUED)

Characteristics

Contact Resistance	0.100 ohms per MIL-STD-202, Method 307 <i>Contact resistance shown is for the M2 thermostat and does not include resistance of wire leads or connector.</i>
Dielectric Strength	1250 VAC, rms, 60 cycles for 1 minute, per MIL-STD-202, Method 301
Salt Spray Resistance	Per MIL-STD-202, Method 101, Condition B, 5% Solution
Ambient Temperature Range	-65°F to 400°F (-53.9°C to 204.4°C) <i>Maximum ambient exposure should be limited to 100°F above operating temperature for close on rise devices or 100°F below the operating temperature for open on rise devices.</i>
Operating Temperature Range	0°F to +240°F, (-17.8°C to 115.6°C)

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

Operating Temperature Range	Differentials Available	Closing Temperature Tolerance*	
		Standard	Special
0 to 240°F (-17.8 to 115.6°C)	2 to 5°F (1.1 to 2.8°C)	+/- 5°F (+/- 2.8°C)	+/-4°F (+/-2.2°C)

* Tolerances are based on precision factory calibration and test equipment. Customers checking tolerances should allow for differences in test equipment of ±1°F.



CONFIGURATIONS

Standard narrow differential probe packages are comprised of the following physical features, but many other variants are available to meet your needs.

PLEASE NOTE: The orientation of the connector with respect to the package body is not controlled.

Configuration Options

Custom configurations are available

Probe Body Thread Sizes	Standard lengths are available in ½" increments, from 1.5" to 6". Standard probe bodies are available with the following thread sizes: ¾" - 16 ½" - 14 NPT
Termination	Standard connector is a Sealtron B8002G-10SL-4P-F (or equivalent) Standard wire leads are AWG #18 stranded wire with white or black Teflon* insulation (per MIL-W-22759) (Teflon is a trademark of E. I. Dupont de Namers and Co.)
Finish	The standard material is stainless steel
Other	Other styles are available, as well as custom designs

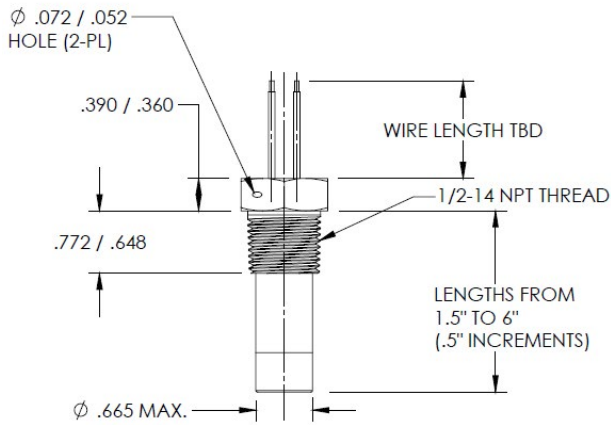
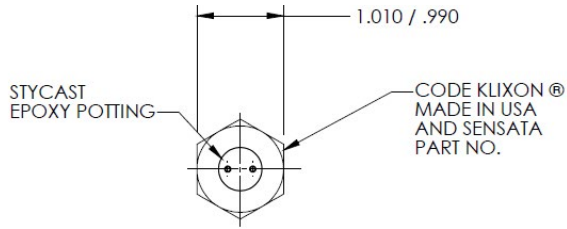


Standard Part Numbers and Configurations

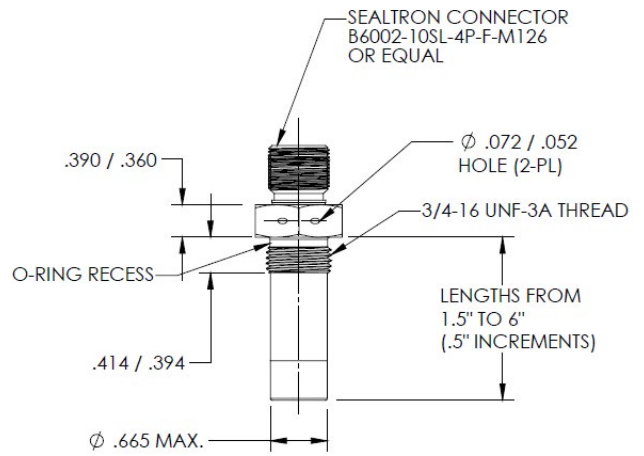
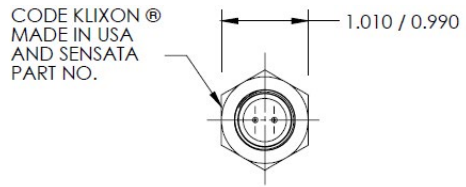
Many other styles are available

21545	½" pipe thread with leads
21546	¾" - 16 thread with connector
21547	¾" - 16 thread with leads
21550	½" pipe thread with connector

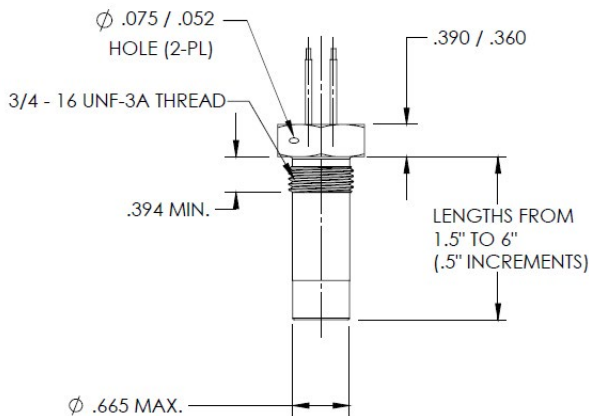
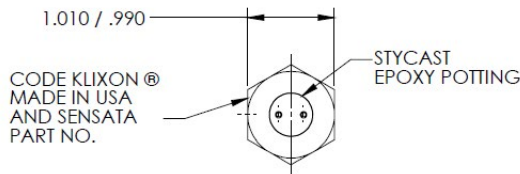
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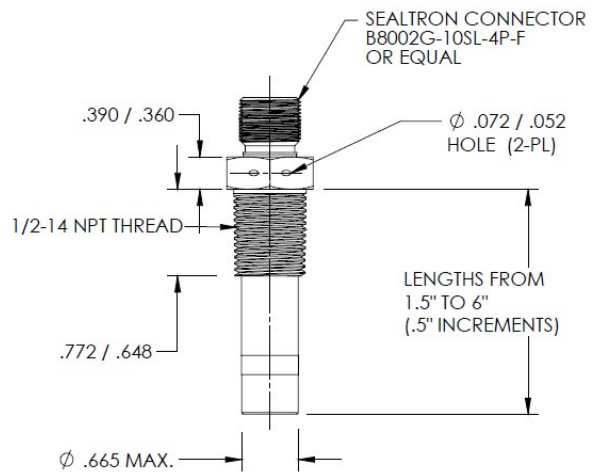
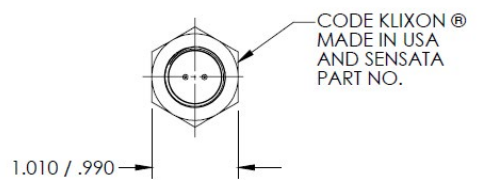
21546



21547



21550





21546 - 06 - XXX - 03

Basic Package

21545 (or 21546, 21544, 21547, or 21550)

Basic package describes general physical appearance and basic thermostat incorporated into device

Probe Length

Probe length times 2

(probe length is the length in inches from bottom of the hex to bottom of the device)

Operating Characteristics

Assigned consecutively (Sensata will assign this number at the time your order is taken)

Wire Leads

For wire leads, this is the length of wire in 6 inch increments (for 6" it would be 1, for 12" it would be 2, for 18" it would be 3, etc.). For connectors, contact Sensata Technologies for this code.



WARNINGS



RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE

- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

Failure to follow these instructions can result in serious injury, or equipment damage.



HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Disconnect all power before installing or working with this equipment
- Verify all connections and replace all covers before turning on power

Failure to follow these instructions will result in death or serious injury.

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