



## **AIRPAX**® | **ComboSense™ 6024 Series** **TEMPERATURE SENSOR & THERMOSTAT PROBE**

### FEATURES

- Thermostat & temperature sensor in one robust package
- Stainless steel or brass construction
- Ideal for immersion sensing where mounting holes are limited

### DESCRIPTION

The Airpax™ 6024 thermal sensor-switch offers the function and reliability of a grounded case snap-action thermostat with the sensing capability of a solid-state thermistor in a single economical package. The switch is available in temperature ranges from 40°C to 130°C, with a variety of terminal and body options.

The 6024 series is ideal for sensing engine oil / coolant or transmission fluid for overheat conditions. Additionally, it provides a solution for engine applications where mounting holes are limited.

### THERMOSTAT SPECIFICATIONS

<b>Contact Ratings</b>	<i>Cycles</i> 30,000	<i>Voltage</i> 120VAC / 48VDC	<i>Amps</i> 1 (resistive)
<b>Contact Operations</b>	Either close on rise (make) or open on rise (break), SPST (Single Pole, Single Throw)		
<b>Operating Temperature</b>	40°C to 130°C (104°F to 266°F), std tolerance ±5°C (±8°F)		
<b>Dielectric Strength</b>	500 VAC, 60Hz thermostat terminals to case across open contacts <i>Note: Do not apply dielectric test voltage to the thermistor terminal as permanent damage could occur to the sensor element.</i>		
<b>Insulation Resistance</b>	50 megaohms, minimum at 500 VDC		
<b>Vibration</b>	.06DA, 10-55 Hz, 20G 10-2000 Hz		
<b>Shock</b>	.75G 6ms duration (sawtooth)		
<b>Materials</b>	Stainless steel or brass body and tube, Mylar sleeve, epoxy fill potting, stainless or plated steel terminals, fine silver contacts, gold-plated crossbar for low level switching		

### TEMPERATURE SENSOR SPECIFICATIONS

<b>Solid-State Sensor</b>	Conventional NTC (Negative Temperature Coefficient) and PTC (Positive Temperature Coefficient) thermistors available. Specific resistance values and tolerances are per customer specifications.
<b>Operating Temperature</b>	-40°C to 120°C (-40°F to 248°F) (other ranges available)

**1. CONTACT OPERATION**

CODE	DESCRIPTION
<b>O</b>	Letter "O" = Open on Rise
<b>C</b>	Letter "C" = Close on Rise

To build your part number (PN), choose the proper codes from pages 2 to 3.

Consult Sensata Technologies when a code Z is used to indicate a special requirement. For each 6024, Sensata will assign a unique, customer-specific four digit nondescript number to complete the customer specific part number build.

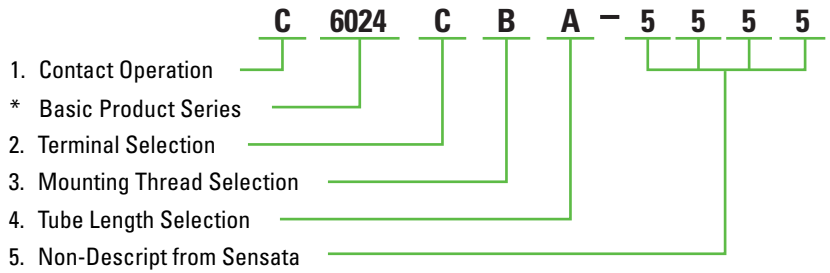
**2. TERMINAL SELECTION**

<p><b>A</b></p> <p>#8-32 Pan Head Screw (x2) #7 Lock Washers (Packaged in plastic bag)</p> <p>30° to 45°</p> <p>(12.70 ± .38) 0.500 ± .015</p> <p>(22.23) REF .875</p> <p>Mounting Encapsulated</p>	<p><b>B</b></p> <p>(6.35) 0.250 Quick Connects (x2)</p> <p>30°</p> <p>(12.70 ± .38) 0.500 ± .015</p> <p>(22.23) REF .875</p> <p>Mounting Encapsulated</p>	<p><b>C</b></p> <p>Lead Wire <math>\frac{(152.40 \pm 6.35)}{6.000 \pm .250}</math></p> <p>Strip <math>\frac{(6.35)}{.250}</math></p> <p>(13.84 ± .38) 0.545 ± .015</p> <p>Mounting Encapsulated</p>	<p><b>Z</b></p> <p>Special Requirements Customer to Specify</p>
<p><b>D</b></p> <p>Same as terminal selection "C"</p> <p>Except 2 Leads <math>\frac{(304.80 \pm 25.40)}{12.00 \pm 1.00}</math></p> <p>See note 1 for lead specifications</p>	<p><b>E</b></p> <p>Same as terminal selection "C"</p> <p>Except 2 Leads <math>\frac{(609.60 \pm 25.40)}{24.00 \pm 1.00}</math></p> <p>See note 1 for lead specifications</p>	<p><b>F</b></p> <p>Same as terminal selection "C"</p> <p>Except 2 Leads <math>\frac{(1219.20 \pm 25.40)}{48.00 \pm 1.00}</math></p> <p>See note 1 for lead specifications</p>	

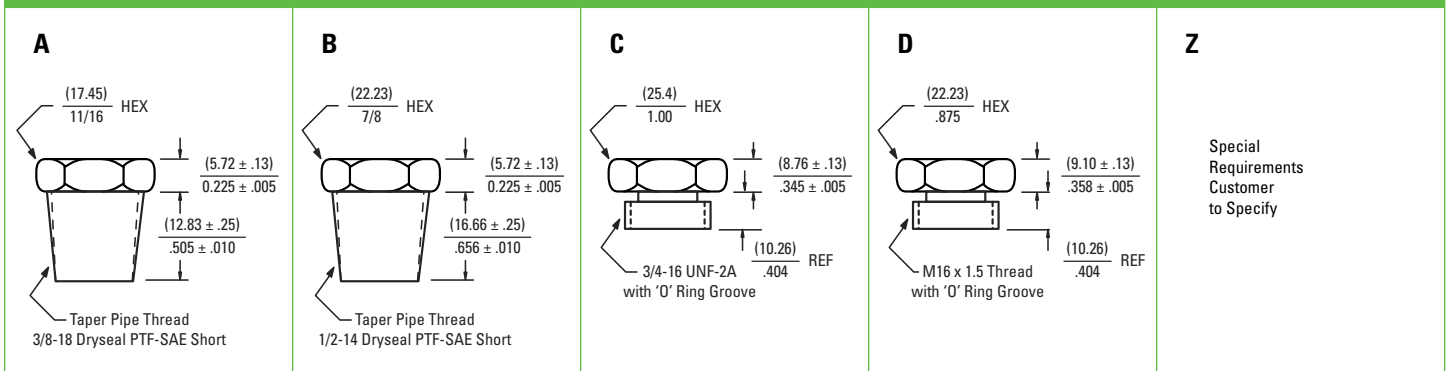
- The standard lead wire (materials) for different temperature ranges are as follows:
  - Up to 220°F (104.4°C) = # 18 AWG stranded. UL Style 1015/CSA approved. (PVC insulation, color black)
  - 221°F to 350°F (105°C to 176.6°C) = #18 AWG stranded. UL Style 1199/CSA approved. (Teflon® TFE insulation, color black)

**EXAMPLE : C6024CBA-5555**

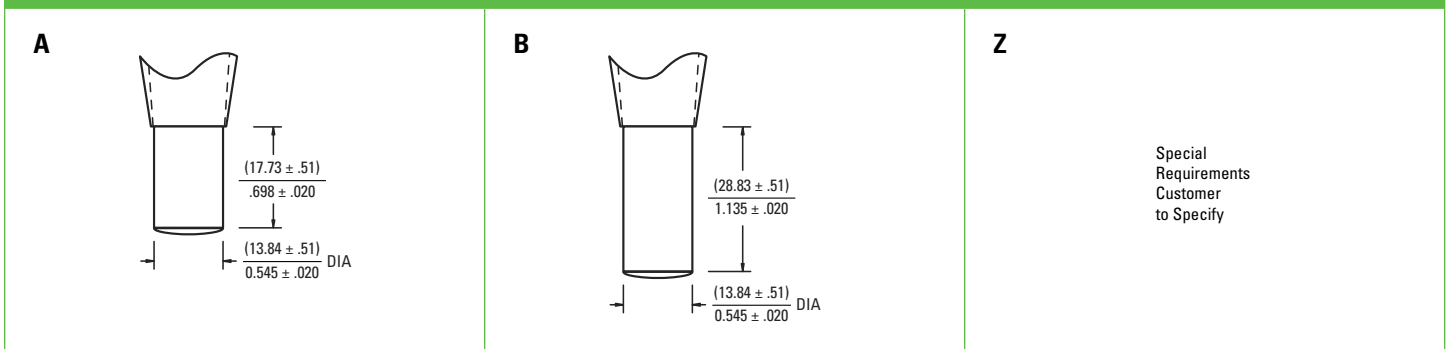
Close contacts on temperature rise, 5100 series, isolated case 6" flying leads, 1/2-14 PTF threads, .698" tube length. Non-descript assigned for thermostat temperature and thermistor selection.



**3. MOUNTING THREAD SELECTION**



**4. TUBE LENGTH SELECTION**



See the chart to the right for recommended thermostat temperature setpoints with their corresponding temperature reset points.

OPERATE ( $\pm 5^{\circ}\text{C}$ )	MIN DIFFERENTIAL ( $^{\circ}\text{C}$ )	MIN RESET ( $^{\circ}\text{C}$ )
40	4	20
45	4	20
50	4	30
55	4	30
60	4	40
65	4	40
70	4	50
75	4	50
80	6	55
85	6	55
90	6	60
95	6	60
100	6	70
105	6	70
110	6	80
115	6	80
120	9	85
125	9	85
130	9	90



**SENSATA TECHNOLOGIES**

529 Pleasant Street  
 Attleboro, MA 02703-0964 USA  
 1-508-236-3287 (Main)  
 1-508-236-1598 (Fax)  
<http://airpax.sensata.com>  
<http://www.sensata.com>

Important Notice: Sensata Technologies (Sensata) reserves the right to make changes to or discontinue any product or service identified in this publication without notice. Sensata advises its customers to obtain the latest version of the relevant information to verify, before placing any orders, that the information being relied upon is current. Sensata assumes no responsibility for infringement of patents or rights of others based on Sensata applications assistance or product specifications since Sensata does not possess full access concerning the use or application of customers' products. Sensata also assumes no responsibility for customers' product designs.