



COMBOSENSE™ 6024 SERIES

Temperature Sensor & Thermostat Probe

Introduction

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.



Features

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



SPECIFICATIONS

Contact Ratings	<i>Cycles</i> 30,000	<i>Voltage</i> 120VAC / 48VDC	<i>Amps</i> 1 (resistive)
Contact Operations	Either close on rise (make) or open on rise (break), SPST (Single Pole, Single Throw)		
Operating Temperature	40°C to 130°C (104°F to 266°F), std tolerance ±5°C (±8°F)		
Dielectric Strength	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>		
Insulation Resistance	50 megaohms, minimum at 500 VDC		
Vibration	.06DA, 10-55 Hz, 20G 10-2000 Hz		
Shock	75G 6ms duration (sawtooth)		
Materials	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

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



THERMOSTAT TEMPERATURE SETPOINTS

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



ORDERING OPTIONS

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.

Contact Operation C **6024** C B A - 5 5 5 5

O = Open on Rise
C = Close on Rise

Basic Product Series **6024**

Terminal Selection **A-F** = Reference Table 1
Z = Special Requirements, Customer to Specify

Mounting Thread Selection **A-D** = Reference Table 2
Z = Special Requirements, Customer to Specify

Tube Length Selection **A-B** = Reference Table 3
Z = Special Requirements, Customer to Specify

Non-Descript from Sensata

Non-descript assigned for thermostat temperature and thermistor selection.



TABLES

TABLE 1: TERMINAL SELECTION		
<p>A</p> <p>#8-32 Pan Head Screw (x2) #7 Lock Washers (Packaged in plastic bag)</p> <p>30° to 45°</p> <p>Mounting Encapsulated</p>	<p>B</p> <p>(6.35) 0.250 Quick Connects (x2)</p> <p>30°</p> <p>Mounting Encapsulated</p>	<p>C</p> <p>Lead Wire (152.40 ± 6.35) 6.000 ± .250</p> <p>(6.35) .250 Strip</p> <p>(13.84 ± .38) 0.545 ± .015</p> <p>Mounting Encapsulated</p>
<p>D Same as terminal selection "C"</p> <p>Except 2 Leads (304.80 ± 25.40) / 12.00 ± 1.00</p> <p>See note 1 for lead specifications</p>	<p>E Same as terminal selection "C"</p> <p>Except 2 Leads (609.60 ± 25.40) / 24.00 ± 1.00</p> <p>See note 1 for lead specifications</p>	<p>F Same as terminal selection "C"</p> <p>Except 2 Leads (1219.20 ± 25.40) / 48.00 ± 1.00</p> <p>See note 1 for lead specifications</p>

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

TABLE 3: TUBE LENGTH SELECTION	
<p>A</p> <p>(17.73 ± .51) .698 ± .020</p> <p>(13.84 ± .51) 0.545 ± .020 DIA</p>	<p>B</p> <p>(28.83 ± .51) 1.135 ± .020</p> <p>(13.84 ± .51) 0.545 ± .020 DIA</p>

TABLE 2: MOUNTING THREAD SELECTION	
<p>A</p> <p>(17.45) 11/16 HEX</p> <p>(5.72 ± .13) 0.225 ± .005</p> <p>(12.83 ± .25) .505 ± .010</p> <p>Taper Pipe Thread 3/8-18 Dryseal PTF-SAE Short</p>	<p>B</p> <p>(22.23) 7/8 HEX</p> <p>(5.72 ± .13) 0.225 ± .005</p> <p>(16.66 ± .25) .656 ± .010</p> <p>Taper Pipe Thread 1/2-14 Dryseal PTF-SAE Short</p>
<p>C</p> <p>(25.4) 1.00 HEX</p> <p>(8.76 ± .13) .345 ± .005</p> <p>(10.26) .404 REF</p> <p>3/4-16 UNF-2A with 'O' Ring Groove</p>	<p>D</p> <p>(22.23) .875 HEX</p> <p>(9.10 ± .13) .358 ± .005</p> <p>(10.26) .404 REF</p> <p>M16 x 1.5 Thread with 'O' Ring Groove</p>

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