



## **AIRPAX® | 5011 Series**

### 1/2" DISC, HERMETICALLY SEALED THERMOSTAT

#### FEATURES

- RoHS compliant per EU directive 2002 / 95 / EC
- 1/2" disc button style
- Hermetic glass seal
- Ideal for surface and immersion sensing

#### DESCRIPTION

Designed to meet exacting shock and vibration requirements, the Airpax™ 5011 series thermostat is a RoHS compliant, positive snap action, single pole / single throw, hermetically sealed unit. Normally supplied with a grounded case construction, an additional terminal can be provided on the case for a positive ground lead or as an isolated device when the unit is insulated from ground.

The 5011 series can be used for temperature warning or protection. Calibration is factory set and is tamperproof. Sensing an abnormal condition, the 5011 actuates and controls a warning light or alarm. Such applications may include the protection of printed circuit boards, bearing mountings, air or water cooled engines and transmissions. A custom package for special mounting is available and includes a threaded brass plug for fluid-sensing applications, aluminum adapter for bolt mounting and insulated base furnished with leads or terminals. It can also be equipped with an adapter and spring clip for mounting on tubing with an O.D. from 3/8" to 1".

#### SPECIFICATIONS

<b>Contact Ratings</b>	<i>Cycles</i>	<i>Voltage</i>	<i>Amps</i>	<i>Case Type</i>
	100,000	120 VAC	3 (resistive)	Ground / Isolated case
	100,000	120 VAC	2 (inductive)	Isolated case
	100,000	32 VDC	3 (resistive)	Grounded case
<b>Contact Operations</b>	Either close on rise (make) or open on rise (break), SPST (Single Pole, Single Throw)			
<b>Operating Temperature</b>	+140°F to 480°F (+60°C to 249°C)			
<b>Temperature Tolerance</b>	Standard of ±5°F with nominal operating temperature settings in 5°F increments			
<b>Long Term Exposure Limit</b>	-65°F to 625°F (-53.8°C to 329.4°C)			
	Note: Please consult the factory if lead wire/terminal exposure temperatures are expected to exceed 220°F. (Refer to inside notes B & C)			
<b>Dielectric Strength</b>	1000 VRMS 60Hz (isolated case) terminals to case (contacts open)			
<b>Insulated Resistance</b>	50 megohms at 500 Vdc			
<b>Thermal Shock</b>	MIL-STD-202, Method 107 Test Condition B			
<b>Materials</b>	Cold-rolled steel, nickel plated enclosure with a glass seal. Applications up to 300°F have a Mylar® sleeve with an epoxy fill, those above 300°F have a Nomex® sleeve and a high temperature epoxy fill.			
	*Exposure limited should be kept to within 100°F of the operating temperature. Consult factory if conditions require otherwise.			

**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 4.

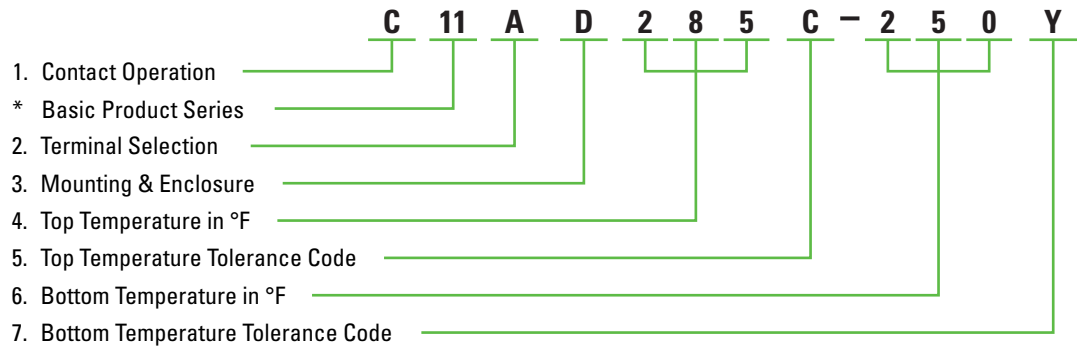
Consult Sensata Technologies when a code Z is used to indicate a special requirement. Sensata will assign a unique, customer-specific four digit nondescript number. To complete the customer specific part number build, replace the bottom temperature and tolerance (codes 6 & 7) after the "-" dash with the assigned four digit nondescript.

**2. TERMINAL SELECTION**

<p><b>A</b></p> <p>Pan Head Screw Terminal, #8-32 Grounded Case Only</p>	<p><b>B</b></p> <p>Pan Head Screw Terminal, #8-32 Grounded Case Only</p>	<p><b>C</b></p> <p>Quick Connect Terminal, Grounded Case Only</p>	<p><b>D</b></p> <p>Quick Connect Terminal, Grounded Case Only</p>	<p><b>E</b></p> <p>6" Lead Wire, Grounded Case Only See note 1 for lead specifications</p>	
<p><b>F</b></p> <p>Same as terminal selection "E"</p> <p>Except 1 Lead <math>\frac{304.80 \pm 25.40}{12.00 \pm 1.00}</math></p> <p>See note 1 for lead specifications</p>	<p><b>J</b></p> <p>2 Pan Head Screw Terminals, #8-32 Isolated Case Only</p>	<p><b>K</b></p> <p>2 QC Terminals, Isolated Case Only</p>	<p><b>L</b></p> <p>2 Leads, Isolated Case Only See note 1 for lead specifications</p>	<p><b>M</b></p> <p>Same as terminal selection "L"</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>G</b></p> <p>Same as terminal selection "E"</p> <p>Except 1 Lead <math>\frac{609.60 \pm 25.40}{24.00 \pm 1.00}</math></p> <p>See note 1 for lead specifications</p>	<p><b>J</b></p> <p>2 Pan Head Screw Terminals, #8-32 Isolated Case Only</p>	<p><b>K</b></p> <p>2 QC Terminals, Isolated Case Only</p>	<p><b>L</b></p> <p>2 Leads, Isolated Case Only See note 1 for lead specifications</p>	<p><b>N</b></p> <p>Same as terminal selection "L"</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>H</b></p> <p>Same as terminal selection "E"</p> <p>Except 1 Lead <math>\frac{1219.20 \pm 25.40}{48.00 \pm 1.00}</math></p> <p>See note 1 for lead specifications</p>	<p><b>J</b></p> <p>2 Pan Head Screw Terminals, #8-32 Isolated Case Only</p>	<p><b>K</b></p> <p>2 QC Terminals, Isolated Case Only</p>	<p><b>L</b></p> <p>2 Leads, Isolated Case Only See note 1 for lead specifications</p>	<p><b>P</b></p> <p>Same as terminal selection "L"</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>	
					<p><b>Z</b></p> <p>Special Requirements Customer to Specify</p>

**EXAMPLE : C11AD285C-250Y**

Close contacts on temperature rise, 5011 series, grounded case 8-32" screw terminal, 0.385" single hole mounting bracket, 285°F top temperature with a ±10°F standard top tolerance and a standard 35°F differential between top and bottom temperature for temperature range of 251°F to 400°F, differential helps calculate a bottom temperature of 250°F with a standard minimum reset for contacts to close at or above the bottom temperature set point.



**4. MOUNTING AND ENCLOSURE SELECTION**

<p><b>C</b></p>	<p><b>D</b></p>	<p><b>E</b></p>	<p><b>F</b></p>	<p><b>G</b></p>
<p><b>H</b></p>	<p><b>RR *</b></p>	<p><b>SS *</b></p>	<p><b>Z</b></p> <p>Special Requirements Customer to Specify</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)
    - 351°F (177.2°C) and above = #18 AWG stranded. UL style 5288/CSA approved. (Composite of Teflon®, ceramic + glass braid, color brown)
  - For mounting code "C" only, encapsulation above the hex is omitted and terminal height is reduced by the amount of encapsulation.
  - The marking information on each thermostat will include either the name Sensata or Airpax, contact operation (CLR) close on rise, (OPR) open on rise, top temperature and date code.
- \* If you require either of the terminal selections "RR" or "SS", it will require the use of both position 3 (terminal selection), and position 4 (mounting and enclosure selection) in your part number building code. For example: C11RR285C-250Y

## 5. TOP TEMPERATURE IN °F

	°F	°C	°F	°C	°F	°C
<b>Temperature Setting</b>	140°F to 250°F	60°C to 121.1°C	251°F to 400°F	94°C to 149°C	401°F to 480°F	150°C to 163°C
<b>Standard Tolerance</b>	±5°F	±2.8°C	±10°F	±5.6°C	±25°F	±13.9°C
<b>Nominal Differential</b>	25°F	13.9°C	35°F	19.4°C	40°F	22.2°C

**NOTES:**

- Select any temperature in the range of 140°F to 480°F. Standard choices fall on the 5°F increments, for example 140°F, 145°F, 150°F, 155°F... up to 475°F or 480°F
- Specify the °F temperature in the part numbering scheme as a three digit code without the "°F" in the part number. For example, for 200°F, put in code '200'

## 6. TOP TEMPERATURE TOLERANCE

CODE	A	C	N	X	Z
± °F	±5°F	±10°F	±25°F	Maximum	Customer to Specify
± °C	±2.8°C	±5.6°C	±13.9°C	Maximum	Customer to Specify

**NOTES:**

- The standard tolerance for the top temperature is based on the temperature range the top temperature falls in, please refer to "5. Top Temperature in °F" chart, and select the appropriate code for a standard top temperature tolerance.

## 7. BOTTOM TEMPERATURE IN °F

"Bottom Temperature in °F" equals the "Top Temperature in °F" minus the "Nominal Differential in °F for that temperature".

Example 1: 150°F – 25°F = 125°F

Example 2: 300°F – 35°F = 265°F

Example 3: 405°F – 40°F = 365°F

**NOTES:**

- Specify the °F temperature in the part numbering scheme as a three digit code without the "°F" in the part number (example 350°F, put in the code as '350')

## 8. BOTTOM TEMPERATURE TOLERANCE

CODE	A	C	N	Y	Z
± °F	±5°F	±10°F	±25°F	Minimum	Customer to Specify
± °C	±2.8°C	±5.6°C	±13.9°C	Minimum	Customer to Specify

**NOTES:**

- The typical standard bottom temperature tolerance is a 'Y' = minimum trip, which indicates the "reset" trip occurs at or above the lower temperature set point.
- The other standard tolerances are based on the temperature range the bottom temperature is in. The most convenient solution is to use either the 'Y' minimum reset code or choose the same tolerance code selection used in "6. Top Temperature Tolerance Code".



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