

5100 | SERIES

HERMETICALLY SEALED THERMOSTAT PROBE

Introduction

The 5100 series is a single pole, single throw, snap-action, hermetically sealed temperature control designed for applications requiring high vibrational resistance in an isolated case. The snap-action disc is located in the very tip of the probe, assuring rapid and true response to temperature. The welded construction of this sealed thermostat ensures meeting thermal shock specifications of MIL-STD-202, method 107, test condition B. In addition, the tube will withstand a pressure exposure limit of 1500 PSI.



Features

- Hermetic glass seal, isolated-case only
- Ideal for immersion sensing
- Multiple mounting and terminations available
- UL and CSA recognized component

Applications

- Hydraulic Systems
- Degreasers
- Industrial and Portable Compressors
- Refrigeration Systems
- Generator Sets
- Chemical Baths
- Engine Coolant
- Oil and Transmission Protection



SPECIFICATIONS

Contact Ratings	<i>Cycles</i>	<i>Voltage</i>	<i>Amps</i>	<i>Case Type</i>
	100,000	120VAC / 32 VDC	3 (resistive)	isolated case
	100,000	125VAC pilot duty to 240VAC	1.5 (resistive)	isolated case
	6,000	240VAC	2.5 (resistive)	isolated case
Contact Operations	Either close on rise (make) or open on rise (break), SPST (Single Pole, Single Throw)			
Operating Temperature	+35°F to 480°F (+1.67°C to 249°C)			
Dielectric Strength	1800 Vrms, 60Hz terminals to case			
Insulation Resistance	60 megaohms at 500 VDC			
Vibration	.06DA, 10-55 Hz, 20G 20-2000 Hz			
Shock	.75G 6ms duration (sawtooth)			
Pressure Exposure Limit	Standard tube will withstand 1500 psi max			
Approvals	UL E36687 and E66685, CSA LR25561-6 and LR25561-8			
Material	Stainless steel body and tube, compression glass seal, Mylar® sleeve, epoxy fill potting, stainless or plated steel terminals, fine silver contacts			



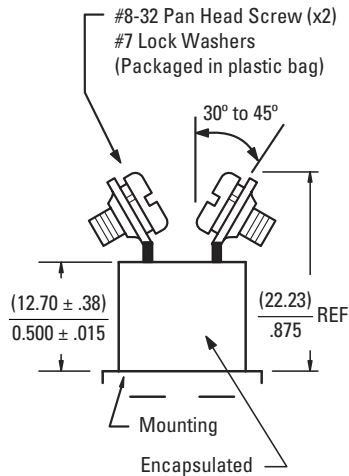
CONTACT OPERATION

CODE	DESCRIPTION
O	Letter "O" = Open on Rise
C	Letter "C" = Close on Rise

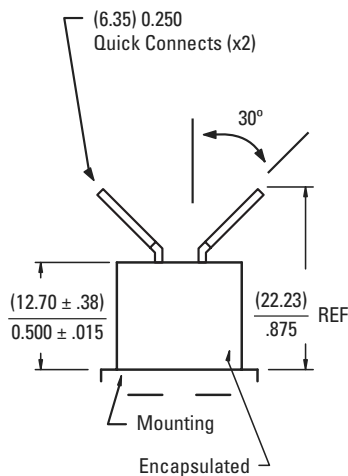


TERMINAL SELECTION

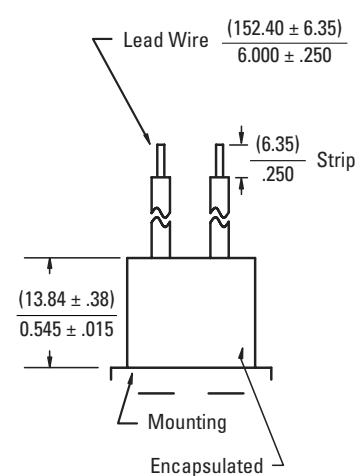
A



B



C



D

Same as terminal selection "C"

Except 2 Leads (304.80 ± 25.40)
12.00 ± 1.00

See note 1 for lead specifications

E

Same as terminal selection "C"

Except 2 Leads (609.60 ± 25.40)
24.00 ± 1.00

See note 1 for lead specifications

F

Same as terminal selection "C"

Except 2 Leads (1219.20 ± 25.40)
48.00 ± 1.00

See note 1 for lead specifications

1. The standard lead wire (materials) for different temperature ranges are as follows:

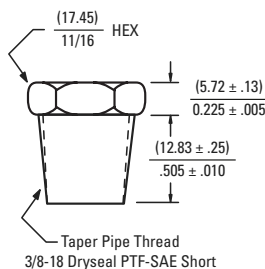
- A. Up to 220°F (104.4°C) = # 18 AWG stranded. UL Style 1015/CSA approved. (PVC insulation, color black)
- B. 221°F to 350°F (105°C to 176.6°C) = #18 AWG stranded. UL Style 1199/CSA approved. (Teflon® TFE insulation, color black)
- C. 351°F (177.2°C) and above = #18 AWG stranded. UL style 5288/CSA approved. (Composite of Teflon®, ceramic + glass braid, color brown)

2. The marking information on each thermostat will include either the name Sensata, contact operation (CLR) close on rise, (OPR) open on rise, top temperature and date code.

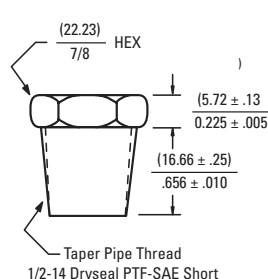


MOUNTING THREAD SELECTION

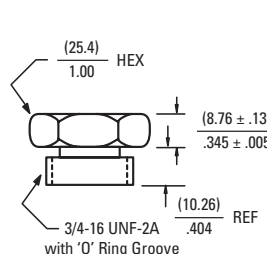
A



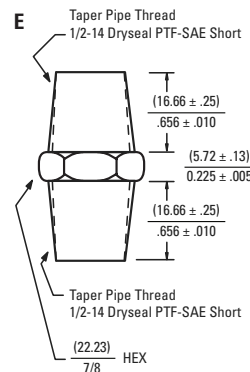
B



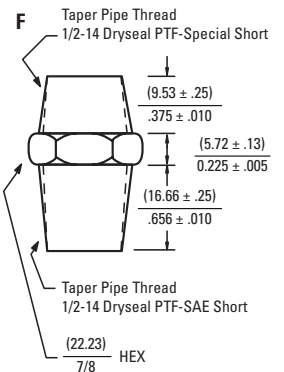
C



E



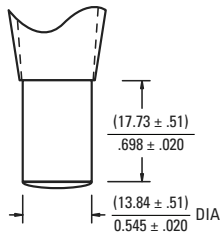
F



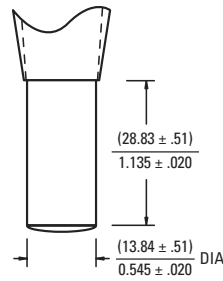


TUBE LENGTH SELECTION

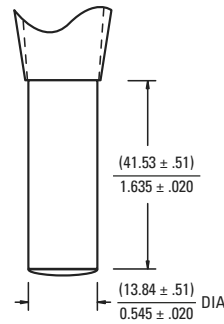
A



B



C



TEMPERATURE CODES AND TOLERANCE

Temperature Scale	Fahrenheit	Celsius	Fahrenheit	Celsius	Fahrenheit	Celsius
Top Temperature Settings	35°F to 250°F	1.7°C to 121.1°C	251°F to 400°F	121.7°C to 204.4°C	401°F to 480°F	205°C to 248.9°C
Standard Top Temperature Tolerance (code)	±5°F (A)	±2.8°C (A)	±10°F (C)	±5.6°C (C)	±25°F (N)	±13.9°C (N)
Nominal Temperature Differential	20°F	11.1°C	40°F	22.2°C	40°F	22.2°C

Note

- Select any temperature in the range of 35°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'
- Bottom Temperature in °F equals the "Top Temperature in °F" minus "Nominal Differential in °F". For example 310°F - 30°F = 280°F

Tolerance Code	A	C	N	Y (Bottom Temp Only)
±°F	±5°F	±10°F	±25°F	Minimum
±°C	±2.8°C	±5.6°C	±13.9°C	Minimum

Note

- The standard tolerance for the top temperature is based on the temperature range the top temperature falls in, please refer to the temperature setting chart, and select the appropriate code for a standard top temperature tolerance
- For bottom temperature tolerance a "Y" = minimum trip, which indicates the "reset" trip occurs at or above the lower temperature set point.



ORDERING OPTIONS

Example :C51CBA285C-245Y

Close contacts on temperature rise, 5100 series, isolated case 6" flying leads, 1/2-14 PTF threads, .698" tube length, 285°F top temperature with a $\pm 10^\circ\text{F}$ standard top tolerance and a standard 40°F differential between top and bottom temperature for temperature range of 251°F to 400°F , differential helps calculate a bottom temperature of 245°F with a standard minimum reset for contacts to close at or above the bottom temperature set point.

	C	51	C	B	A	2	8	5	C	-	2	4	5	Y
Contact Operation														
O, C														
See Contact Operation Table														
Family														
5100 Series														
Terminal Selection														
A, B, C, D, E, F														
See Terminal Selection Table														
Mounting Thread Selection														
A, B, C, E, F														
See Mounting Thread Selection Table														
Tube Length Selection														
A, B, C														
See Tube Length Table														
Top Temperature (in °F)														
See Temperature Code and Tolerance Table														
Top Temperature Tolerance Code														
A, C, N														
See Temperature Codes and Tolerance Table (Available in Increments of 5°F)														
Bottom Temperature (in °F)														
See Temperature Codes and Tolerance Table														
Bottom Temperature Tolerance Code														
A, C, N, Y														
See Temperature Codes and Tolerance Table														



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 ARCH 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

Sensata Technologies, Inc. ("Sensata") data sheets are solely intended to assist designers ("Buyers") who are developing systems that incorporate Sensata products (also referred to herein as "components"). Buyer understands and agrees that Buyer remains responsible for using its independent analysis, evaluation and judgment in designing Buyer's systems and products. Sensata data sheets have been created using standard laboratory conditions and engineering practices. Sensata has not conducted any testing other than that specifically described in the published documentation for a particular data sheet. Sensata may make corrections, enhancements, improvements and other changes to its data sheets or components without notice.

Buyers are authorized to use Sensata data sheets with the Sensata component(s) identified in each particular data sheet. HOWEVER, NO OTHER LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE TO ANY OTHER SENSATA INTELLECTUAL PROPERTY RIGHT, AND NO LICENSE TO ANY THIRD PARTY TECHNOLOGY OR INTELLECTUAL PROPERTY RIGHT, IS GRANTED HEREIN. SENSATA DATA SHEETS ARE PROVIDED "AS IS". SENSATA MAKES NO WARRANTIES OR REPRESENTATIONS WITH REGARD TO THE DATA SHEETS OR USE OF THE DATA SHEETS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ACCURACY OR COMPLETENESS. SENSATA DISCLAIMS ANY WARRANTY OF TITLE AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, QUIET ENJOYMENT, QUIET POSSESSION, AND NON-INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS WITH REGARD TO SENSATA DATA SHEETS OR USE THEREOF.

All products are sold subject to Sensata's terms and conditions of sale supplied at www.sensata.com SENSATA ASSUMES NO LIABILITY FOR APPLICATIONS ASSISTANCE OR THE DESIGN OF BUYERS' PRODUCTS. BUYER ACKNOWLEDGES AND AGREES THAT IT IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL LEGAL, REGULATORY AND SAFETY-RELATED REQUIREMENTS CONCERNING ITS PRODUCTS, AND ANY USE OF SENSATA COMPONENTS IN ITS APPLICATIONS, NOTWITHSTANDING ANY APPLICATIONS-RELATED INFORMATION OR SUPPORT THAT MAY BE PROVIDED BY SENSATA.

Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA.

CONTACT US

Americas

+1 (888) 438 2214
sensors@sensata.com

Europe, Middle East & Africa

+359 (2) 804 7165
temperature-info.eu@sensata.com

Asia Pacific

sales.isasia@list.sensata.com

China +86 (21) 2306 1500

Japan +81 (45) 277 7117

Korea +82-10-9218-1179

India +91 (80) 67920890

Rest of Asia +886 (2) 27602006
ext 2808