5003 | SERIES

1/2" BIMETAL DISC THERMOSTAT

Introduction

The 5003 series is a RoHS compliant, positive snap action, single pole / single throw, bimetallic thermostat which provides accurate and reliable sensing and switching in a single device. It is ideal for applications when space is at a premium with overall depth, without projecting terminals, being only 0.250 in.

The basic switch assembly is operated by a bimetal disc with positive, reinforced snap-action, which is known for its reliable repeatability. With several terminal and mounting options, the 5003 series offers excellent shock and vibration resistance due to the robust construction of its switch assembly. For high humidity and contaminating atmosphere applications, the device is sealed with a non-volatile resin. Narrow differential devices are ideal for control, while standard differentials can be used for high or low temperature limit switches.



Features

- Ideal for surface and air sensing
- RoHS compliant per EU directive 2002 / 95 / EC
- 1/2" disc button style
- Low profile design

Applications

- Automation
- Control
- PCB
- AC/DC Control
- Small Appliance
- Water Heater

SPECIFICATIONS

Contact Ratings	**Cycles**	**Voltage**	**Amps (resistive)**
	100,000	120 VAC	5
	100,000	240 VAC, 24VDC	3
	100,000	48 VDC	1.5
Contact Operations	Either close on rise (make) or open on rise (break), SPST (Single Pole, Single Throw)		
Operating Temperature	+35°F to 325°F (+1.67°C to 162.78°C)		
Temperature Tolerance	Standard of ±5°F with nominal operating temperature settings in 5°F increments		
Long Term Exposure Limit	-40°F to 350°F (-40°C to 176.67°C)		
Dielectric Strength	1500 Vrms 60Hz, 1 minute, terminals to case		
Weight	2.3 grams (0.08 oz)		

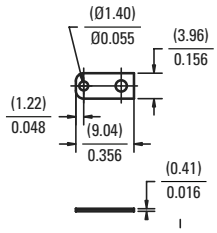
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CONTACT OPERATION

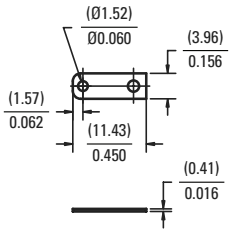
CODE	DESCRIPTION
O	Letter "O" = Open on Rise
C	Letter "C" = Close on Rise

TERMINAL SELECTION

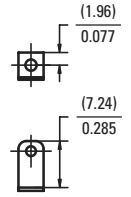
A



B

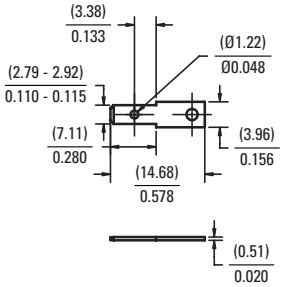


C

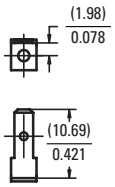


Same as View "B"
Except Formed 90˚

E

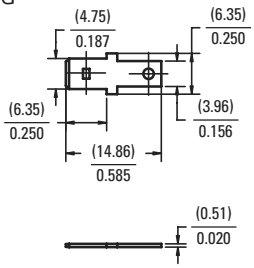


F

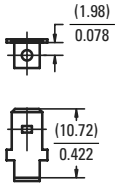


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Except Formed 90˚

G

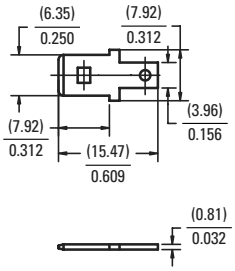


H

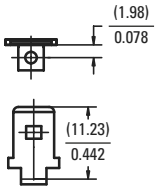


Same as View "G"
Except Formed 90˚

J



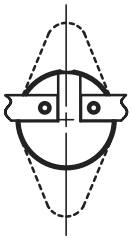
K



Same as View "J"
Except Formed 90˚

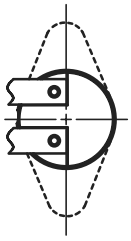
TERMINAL ORIENTATION

A



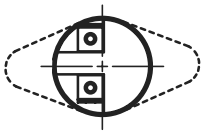
OPPOSED: Terminals on opposite sides of thermostat, on a parallel plane to the mounting bracket / base

B



PARALLEL: Terminals on same side of thermostat, on a parallel plane to the mounting bracket / base

C

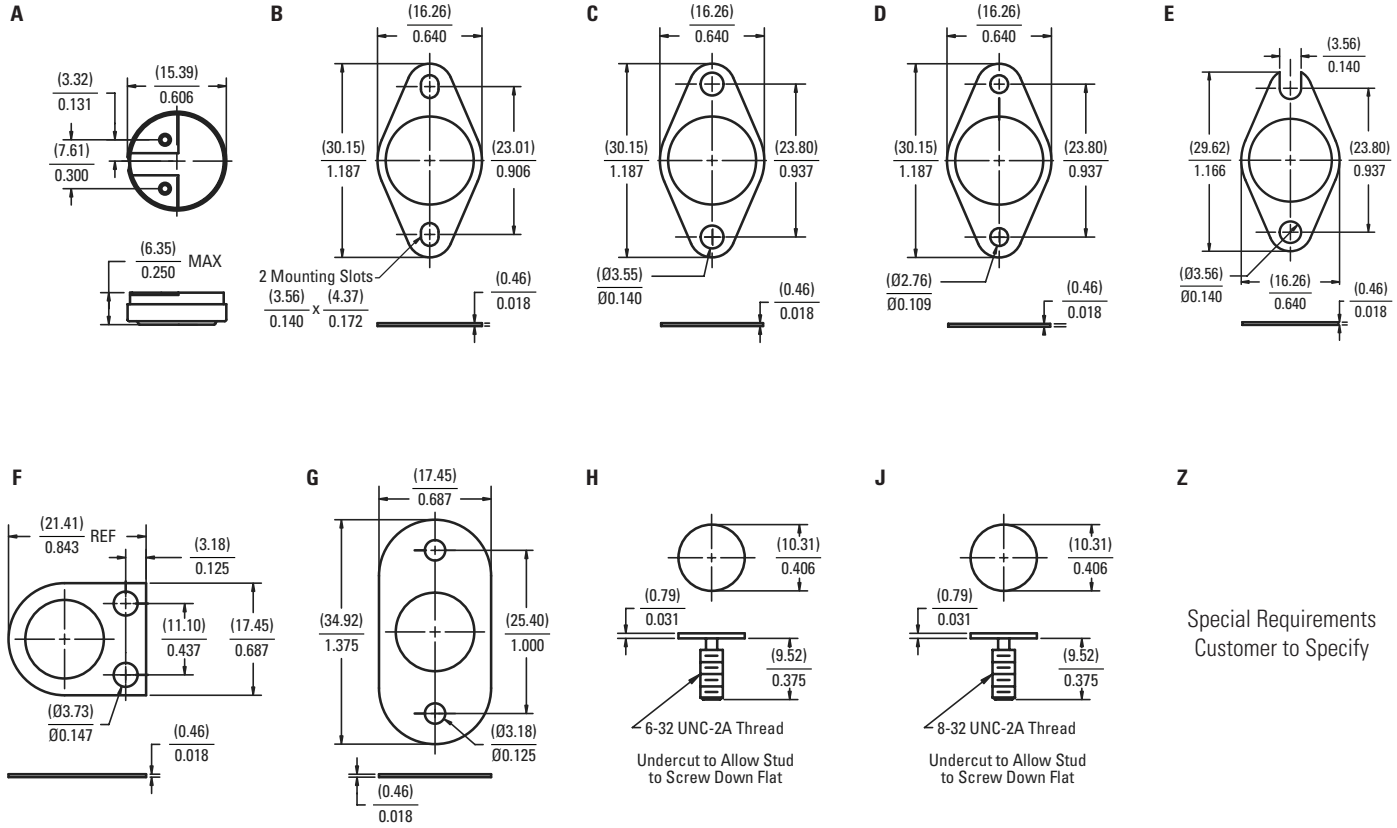


VERTICAL: Both terminals extend up and away, on a perpendicular plane to the mounting bracket / base

Terminal orientation restrictions											
'A' (Opposed)					'B' (Parallel)			'C' (Vertical)			
A	B	E	G	J	A	B	E	C	F	H	K

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MOUNTING AND ENCLOSURE SELECTION



TEMPERATURE CODES AND TOLERANCE

Temperature Scale	Fahrenheit	Celsius	Fahrenheit	Celsius	Fahrenheit	Celsius
Top Temperature Settings	35˚F to 200˚F	1.7˚C to 93˚C	201˚F to 300˚F	94˚C to 149˚C	301˚F to 325˚F	150˚C to 163˚C
Standard Top Temperature Tolerance (code)	±5˚F (A)	±2.8˚C (A)	±8˚F (B)	±4.4˚C (B)	±10˚F (C)	±5.6˚C (C)
Nominal Temperature Differential	15˚F	8.3˚C	25˚F	13.8˚C	30˚F	16.7˚C

Note

- Select any temperature in the range of 35°F to 325°F. Standard choices fall on the 5°F increments, for example 140°F, 145°F, 150°F, 155° F... up to 320°F or 325°F
- Specify the °F temperature in the part numbering scheme as a three digit code without the '°F' in the part numbe r. 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	B	C	Y (Bottom Temp Only)
±˚F	±5˚F	±8˚F	±10˚F	Minimum
±˚C	±2.8˚C	±4.4˚C	±5.6˚C	Minimum

Note

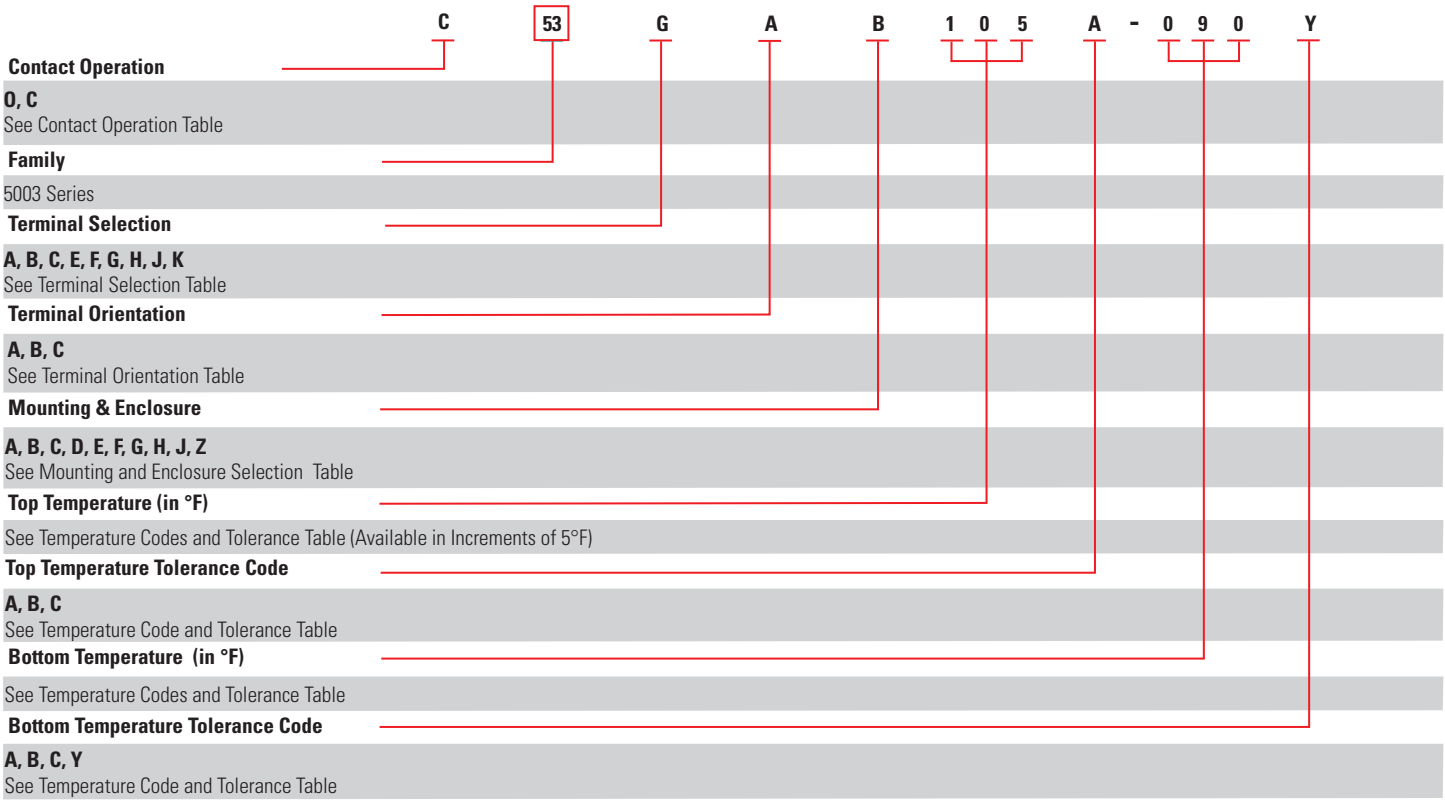
- The standard tolerance for the top temperature is based on the temperature range the top temperature falls in, please refer to the temperature setting chart, and select the appropriate code for a standard top temperature tolerance
- For bottom temperature tolerance a "Y" = minimum trip, which indicates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

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ORDERING OPTIONS

Example : C53GAB105A-090Y

Close contacts on temperature rise, 5003 series, 0.187" horizontal quick-connects with opposed orientation, mounting bracket with two 0.140" x 0.172" mounting slots, 105°F top temperature with a ±5°F standard top tolerance and a standard 15°F differential between top and bottom temperature for temperature range of 35°F to 200°F, differential helps calculate a bottom temperature of 90°F with a standard minimum reset for contacts to open at or above the bottom temperature setpoint.



IMPORTANT NOTICE

These devices are not intended for use as service or repair components, strictly for use by Original Equipment Manufacturer. This product is not rated as explosion proof and should not be applied in any application where flammable vapors or dust is present. End of life failure of this device may result in either open or closed circuit condition, and as such, OEMs must apply end of life protection in series, per agency requirements.

Users are solely responsible for proper design, application and function of this product in the end product or system. Users must evaluate the suitability of these devices in their application with respect to Temperature Settings, Mechanical and Electrical Life Cycles, Electrical loads and Environmental conditions.

These products are not environmentally sealed and have exposed electrical components. They are not intended to be used in applications where exposure to condensing or dripping liquids, Immersion in liquids, or exposure to other environment contaminants may occur.

Excessive mechanical cycling, high electrical loading or exposure to liquids or other environmental contaminants, as noted above, may compromise the electrical insulating properties of these devices. Such conditions may result in electric insulation breakdown accompanied by localized heating. The device may remain permanently closed or open as a result of these conditions as well as at normal end of life.

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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

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