

Series 5020 Hermetically Sealed Immersion-Type Thermostats

This single throw, snap-action, hermetically sealed temperature control is designed for applications requiring high vibrational resistance. The snap-action disc is located in the very tip of the probe, assuring rapid and true response to temperature.

The welded construction (and grounded case) 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.

Typical applications include hydraulic systems, degreasers, industrial and portable compressors, refrigeration systems, generator sets, chemical baths, engine coolant, oil and transmission protection.

The accuracy and reliability of Airpax Thermostats begins with their carefully tested bimetallic discs. When a disc reaches the specified temperature, it reacts instantaneously, causing a circuit to be either opened or closed. Since the disc is specially formed and heat-treated to retain its shape, Airpax Thermostats have excellent repeatability in the most demanding applications.



SPECIFICATIONS

- **Contact Rating:**
3 amps at 12Vdc or 32Vdc (switching)
- **Contact Operation:**
Either open on rise or close on rise
- **Operating Temperature Range:**
35°F to 500°F (1.7°C to 260°C)
*Note: Tolerances vary with temperature
Tube Temperature Exposure Limit: -40°F to 550°F
(-40°C to 288°C). Must not exceed 100°F of actuating
temperature. Please consult factory if lead
wire/terminal exposure temperatures exceed 220°F.
(Refer to inside note 3)*
- **Shock:** 75G 6ms duration (sawtooth)
- **Vibration:** .06DA, 10-55Hz, 20G 20-2000Hz
- **Dielectric Strength:** 500Vac, 60Hz
Terminal to case across open contacts
- **Military Specifications:**
5020-13 conforms to MIL-S-12285/1
Thermal Shock per: MIL-STD-202,
Method 107, Condition B

MATERIALS

- **Body and Tube:** Stainless steel
- **Seal:** Compression glass
- **Potting:** Mylar sleeve, epoxy fill
- **Terminals:** Stainless or plated steel
- **Contact:** Fine silver

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SELECTION CODE CHART

A Contact Operation

Choose from codes across for specific contact operation (see chart).

CONTACT OPERATION

Code O = Open on Rise

Code C = Close on Rise

B Basic Series Number

Code 20 for all variations of this thermostat.

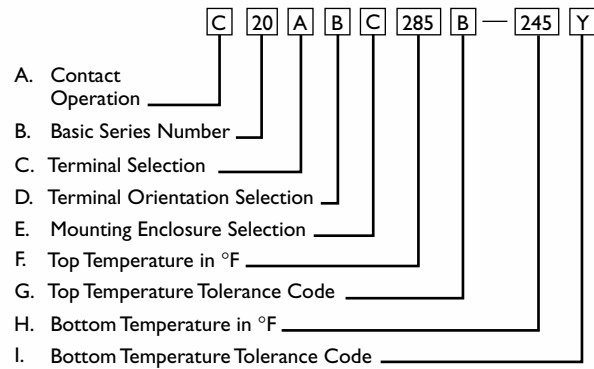
To establish your Airpax Thermostat Part Number precisely, choose the proper code letter from the following tables for terminal selection and mounting. Then complete your selection code chart by using temperature specification tables 1 and 2.

HOW TO USE THIS CHART

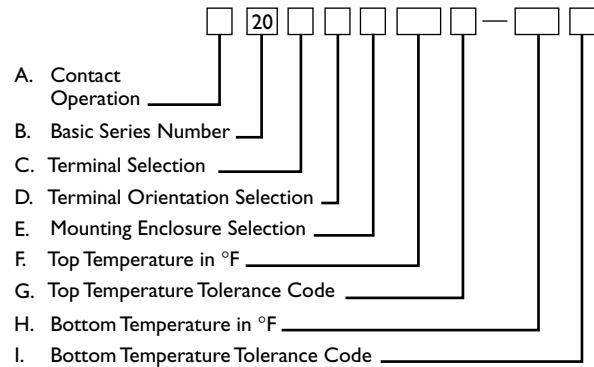
Each thermostat P/N (Part Number) consists of functional “building blocks” to enable the user to specify clearly and precisely the desired characteristics in each selection category. Select the proper Code in each category, then transfer it to “Your PN” boxes to the right. Unless a special requirement (Code Z) is indicated, the entries in “Your PN” boxes will accurately specify a standard catalog item.

When Code Z is used, special features (not specified herein) or a unique part number is required, the last four digits from the part number (bottom temperature and tolerance) will be eliminated and a unique four digit number assigned by Airpax will be inserted. The example shown, records a selection of a standard item with a typical code specified in each “building block” category.

EXAMPLE PN:



YOUR PN:

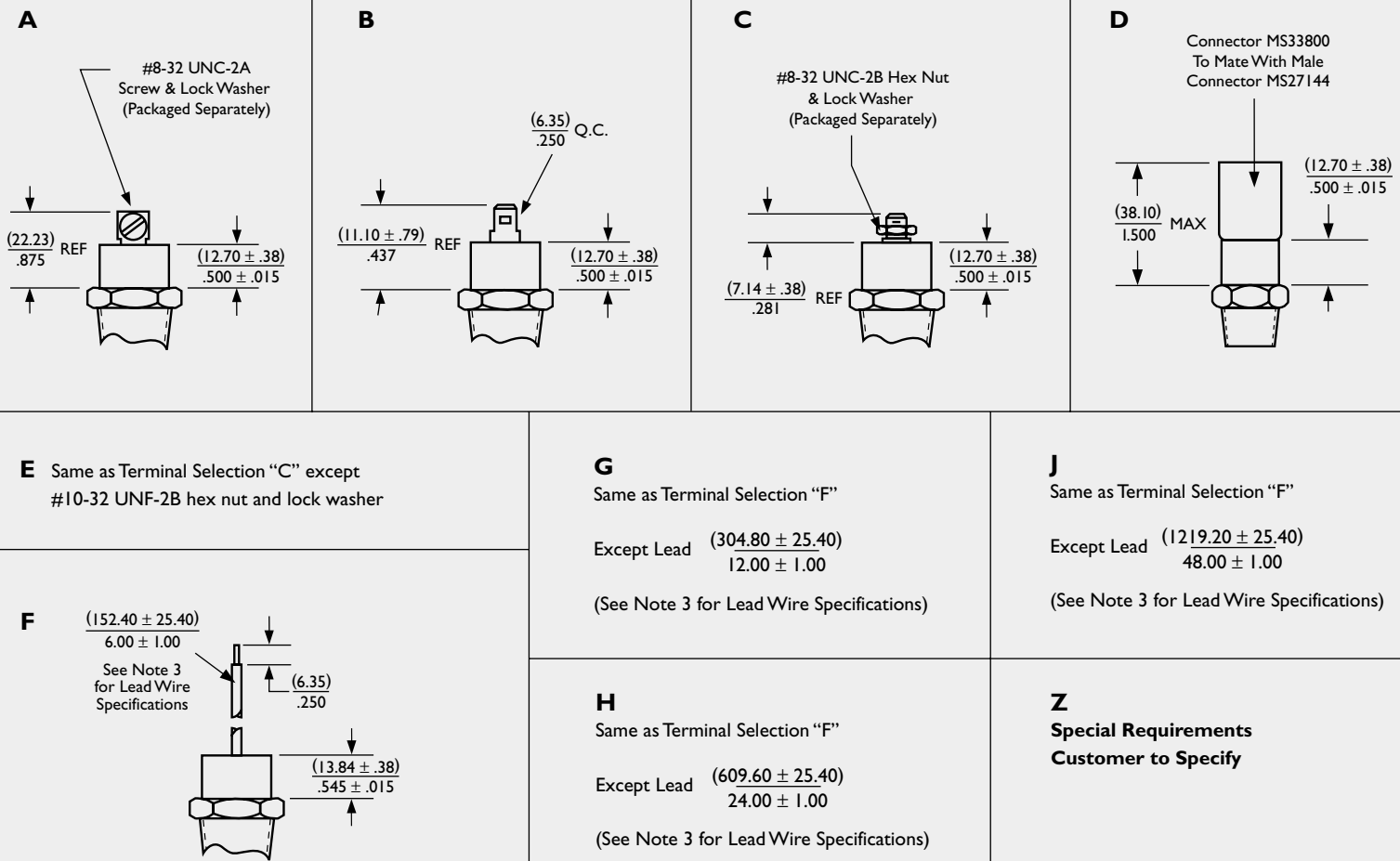


NOTES

- See Tables 1 and 2 for Operating Temperature Settings and Temperature Tolerances.
- The marking information on each thermostat will be on the hex or sensing tube and include the trade name Airpax, contact operation (CLR) close on rise, (OPR) open on rise, top temperature and date code.
- The standard lead wire material for different temperature ranges is as follows:
 - A.** Up to 220°F (104.4°C) - #18 stranded UL 1015/CSA approved (PVC insulation - color black)
 - B.** 221°F to 350°F (105°C to 176.6°C) - #18 stranded UL 1199/CSA approved (TFE insulation - color black)
 - C.** 351°F to 500°F (177.2°C to 260°C) - #18 stranded (Teflon, ceramic and glass composite insulation - color brown)

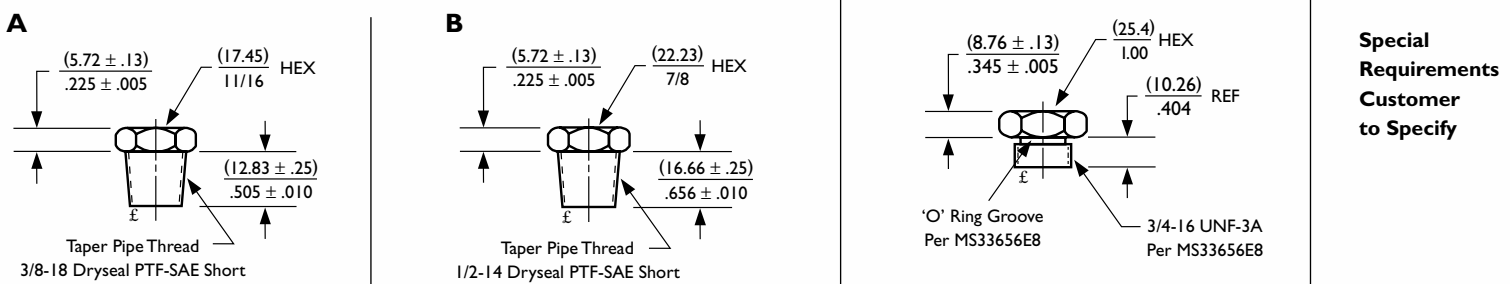


C Terminal Selection

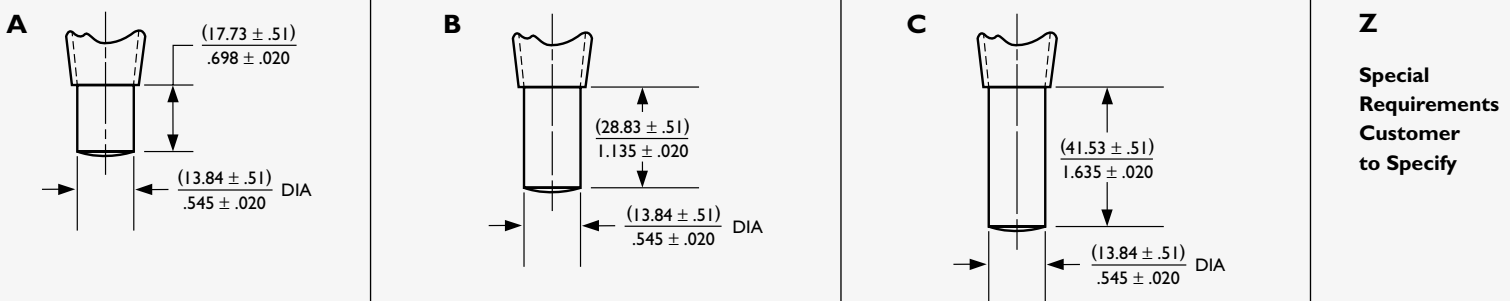


D Body Sizes

(Note: All sensor tubes attached to end indicated by £)



E Tube Lengths



TEMPERATURE SPECIFICATIONS

To complete your part number on Airpax Series 5020 Thermostats, the following information and charts will allow completion of “building blocks” F, G, H and I.

Table 1

OPERATING TEMPERATURE SETTINGS

	°F	°C	°F	°C	°F	°C
Temperature Setting	+35° to +250°	+1.7° to +121.1°	+251° to +400°	+121.6° to +204.4°	+401° to +500°	+205° to +260°
Standard Tolerance	±5°	±2.8°	±10°	±5.6°	±25°	±14°
Standard Nominal Differential	20	11.2	40	22.4	60	33.5

Table 2

STANDARD TEMPERATURE TOLERANCE CODE FOR PART NUMBER SELECTION

CODE	A	B	C	X	Y
±°F	5	10	25	Maximum	Minimum
±°C	2.8	5.6	14	Maximum	Minimum

F Top Temperature in °F

Select any temperature in the range of 35°F to 500°F. See Table 1.

G Top Temperature Tolerance Code

Choose from the codes in Table 2, but don't select a tolerance more restrictive than those specified in Table 1.

H Bottom Temperature in °F

The bottom or reset temperature is obtained by subtracting the Standard Nominal Differential of the applicable range (Table 1) from the Top Temperature selected in step F.

I Bottom Temperature Tolerance Code

Choose from the codes in Table 2, applying the same restrictions used in selecting the Top Temperature Tolerance in step G. A minimum temperature is standard (“Y” designation).

For tolerances and differentials other than the standards in the above tables, please consult Airpax.

Temperature set point calibration is checked at the factory with precision test equipment traceable to the U.S. National Institute of Standards and Technology and Proven Methods. Because customer checking methods may differ, a typical variance for correlation is ±2°F (±1.1°C).

It is the customer's responsibility to determine whether the product is proper for customer's use and application.

This information is subject to change without notice.



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Airpax Corporation · Thermal Sensing Products
 550 Highland Street · Frederick, MD 21701 · USA
 TEL: 301.663.5141 · FAX: 301.698.0624 · www.airpax.net