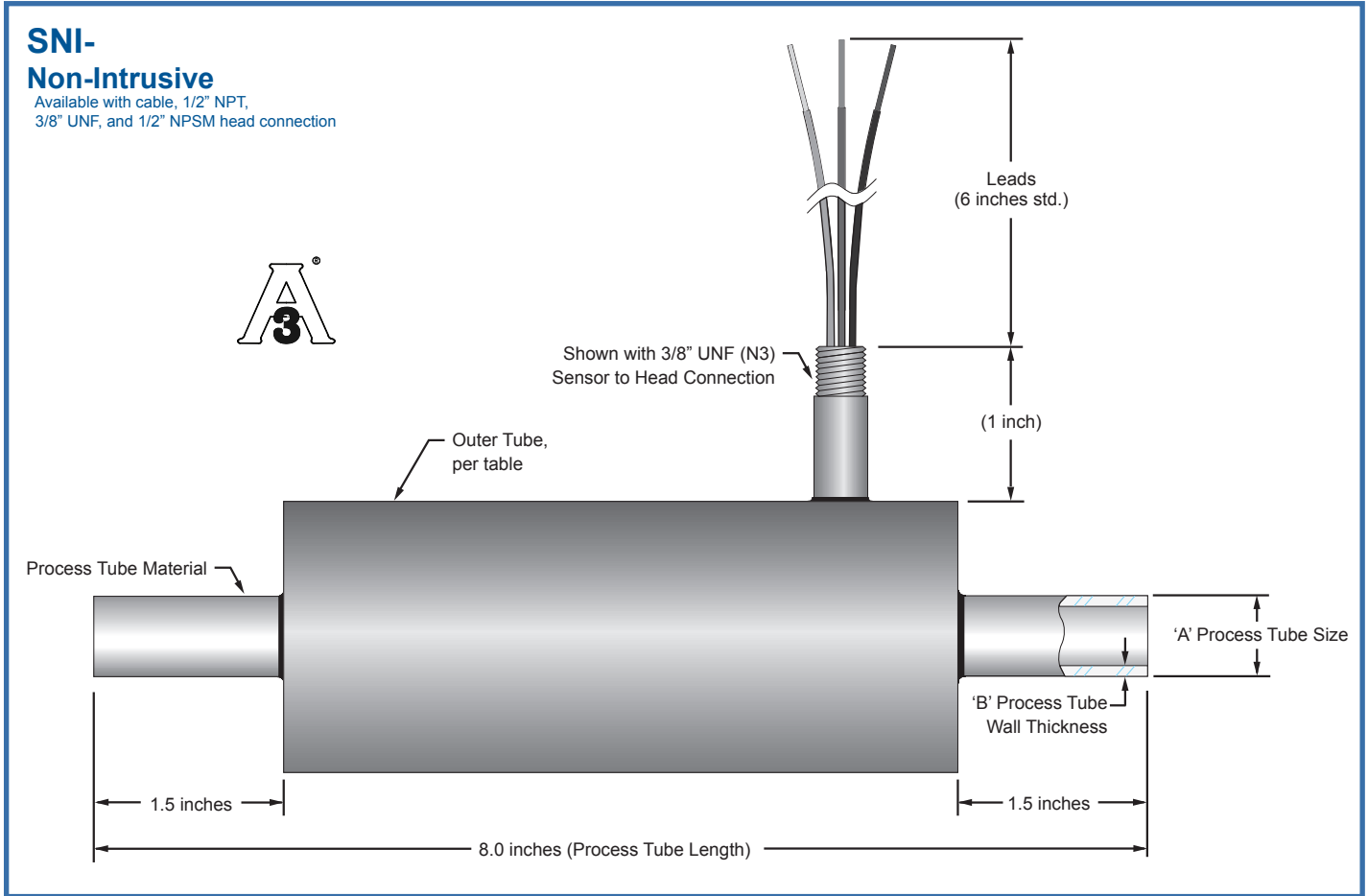


# SNI Sanitary Non-Intrusive Specifications

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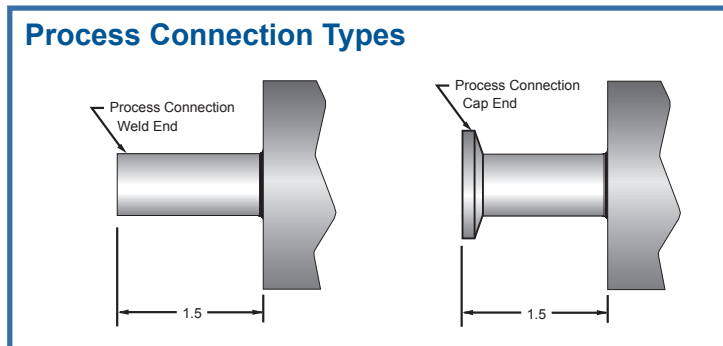


## SNI Application

Burns Engineering has designed the SNI Series as an in-line RTD for product temperature measurement of food, beverage, chemical and pharmaceutical processes. The SNI also validates data on CIP/SIP systems. The SNI Series is ideally suited for use in small diameter process piping where direct immersion temperature probes cannot be used, but where temperature measurement is critical. The in-line design eliminates the need for direct probe insertion into product flow where viscosity and flow rate can affect accuracy and structural integrity.

## SNI Specifications

<b>Temperature Range:</b>	-50 to 200°C
<b>Time Constant:</b>	12 seconds maximum for 63.2% response to step change of temperature in water moving at 3 fps
<b>Repeatability:</b>	Less than ±0.04% change in ice point resistance after 10 consecutive cycles from -50 to 200°C
<b>Long Term Temperature Cycling:</b>	Less than ±0.1% change in ice point resistance after 1000 cycles from 20 to 200°C
<b>Hysteresis:</b>	0.08% maximum between -50°C and 200°C





# RTD Specifications

## Element Resistance:

100 ohms at 0°C nominal

## Temperature Coefficient of Resistance (alpha):

0.00385 Ω/Ω/°C nominal

## Accuracy:

Available with accuracy of ±0.10% and ±0.05%\*\* of resistance at 0°C with typical alpha accuracy of 0.003850 ±0.000005

## Insulation Resistance:

100 megohms minimum at 50 VDC at 25°C, 10 megohms minimum at 50 VDC at 200°C

## Interchangeability:

For 100 ohm elements the tolerance values at any temperature for these specifications are given by:  
 Tolerance °C = ±(0.13 + 0.00185 |t|) for accuracy code 05  
 Tolerance °C = ±(0.26 + 0.0037 |t|) for accuracy code 10  
 (|t| = absolute value of temperature in °C)

## Leadwire:

Teflon™ insulated nickel-plated stranded copper, 22 and 24 AWG typical

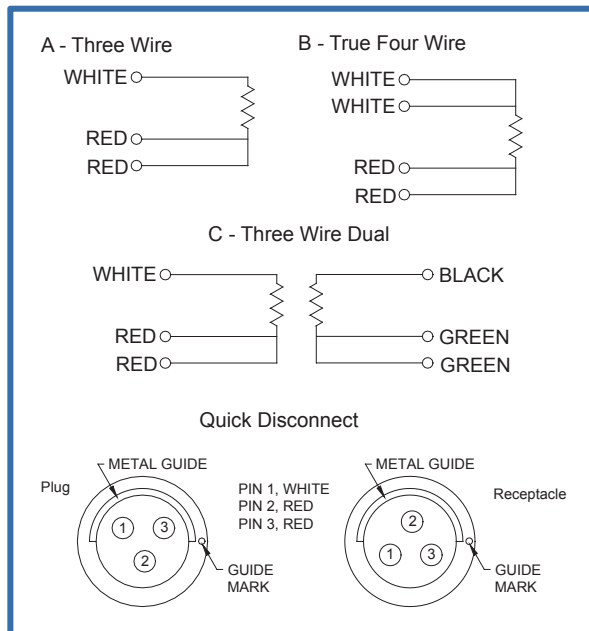
## Sheath Material:

316L stainless steel typical

## 100% Tested:

For accuracy at 0°C and insulation resistance

## Color Codes Element/Leadwire Configuration



Temperature		Interchangeability			
°C	°F	0.05%**		0.10%	
-50	-58	±.23°C	±.41°F	±.45°C	±.80°F
0	32	±.13°C	±.23°F	±.26°C	±.46°F
100	212	±.32°C	±.57°F	±.64°C	±1.15°F
200	392	±.50°C	±.90°F	±1.00°C	±1.80°F

\*\* ±0.05 accuracy is not currently available with the S01, S55 and S60 models

# ANSI Designations

The tables listed below are provided to the user for a ready reference of ANSI designations as compared to the generic and trade names for the most common thermocouple materials. The letter “P” in the designation indicates the positive (+) leg of the calibration while the letter “N” designates the negative (-). Color coding and other means of conductor identification are also provided.

ANSI Thermocouple Type	Temperature Range	Special Limits (% applies to temperature measured in °C)
T	-50°C to 125°C 125°C to 260°C	±0.5°C ±0.4%
J	0°C to 275°C 275°C to 480°C	±1.1°C ±0.4%
E	-200°C to 125°C 125°C to 540°C	±0.5°C ±0.4%
K	0°C to 275°C 275°C to 980°C	±1.1°C ±0.4%

## Thermocouple Grade Wire

ANSI Type	Grade or Generic Trade Names*	Single Conductors	Magnetic	Conductor Color Code	Overall Color Code**
E	Chromel Constantan	EP	No	Purple	Brown w/ Purple Tracer
		EN	No	Red	
J	Iron Constantan	JP	Yes	White	Brown w/ White Tracer
		JN	No	Red	
K	Chromel Alumel	KP	No	Yellow	Brown w/ Yellow Tracer
		KN	Yes	Red	
T	Copper Constantan	TP	No	Blue	Brown w/ Blue Tracer
		TN	No	Red	

## Extension Grade Wire

ANSI Type	Grade or Generic Trade Names*	Single Conductors	Magnetic	Conductor Color Code	Overall Color Code**
EX	Chromel Constantan	EPX	No	Purple	Purple
		ENX	No	Red	
JX	Iron Constantan	JPX	Yes	White	Black
		JNX	No	Red	
KX	Chromel Alumel	KPX	No	Yellow	Yellow
		KNX	Yes	Red	
TX	Copper Constantan	TPX	No	Blue	Blue
		TNX	No	Red	
RX	Copper Alloy #11	RPX	No	Black	Green
		RNX	No	Red	
SX	Copper Alloy #11	SPX	No	Black	Green
		SNX	No	Red	
BX	Copper Copper	BPX	No	Gray	Gray
		BNX	No	Red	
W325X**	Alloy 203 Alloy 225	W3FX	No	Orange	Orange w/ Black Tracer
		W25NX	Yes	Red	
WS26X	Alloy 405 Alloy 426	WSPX	Yes	Orange	Orange
		W26NX	Yes	Red	

\*Trade names: Chromel, Alumel, Constantan - Hoskins Mfg. Co.