

# Bristol® 2808-41A

## Transmisor de Temperatura RTD

Caracterizado por un Consumo De Energía Muy Bajo

El uso de ajustes ya sea finos o gruesos le permite a este transmisor operar con precisión sobre cualquier espectro dentro del rango  $-58$  a  $+662$  grados F.

El transmisor 2808-41A de Bristol® de Emerson Process Management es ideal para instalaciones de control y medición remotas, que usen paneles solares u otras fuentes de energía alternativas, cuando se lo combina con el transmisor de presión 2808-15A, o con el de presión 2808-16 con diafragma embutido y con el transmisor 2808-35A de presión diferencial.

La serie 2808 es excelente para sitios remotos como los pozos de producción de petróleo y gas y para estaciones de medición de gas natural. Todos estos transmisores son, también, ideales para usar con los computadores de flujo TeleFlow, TeleRTU y productos ControlWave LP de Emerson, ya que todos ellos se caracterizan por su bajo consumo de energía y están disponibles en unidades con alimentación estándar, a batería o energía solar.

### Especificaciones Funcionales

#### Tipo de Sensor:

Detector de temperatura resistivo, bulbo de platino de 100-ohm ( $\alpha=0.00385S/S^{\circ}C$ ), Según IEC 751 Clase B.

#### Límites de Rango:

$-50^{\circ}C$  to  $+350^{\circ}C$  ( $-58^{\circ}F$  to  $+662^{\circ}F$ )

#### Ajuste de Espectro:

$-50^{\circ}C$  to  $+300^{\circ}C$  ( $-58^{\circ}F$  to  $+572^{\circ}F$ ) or  $0^{\circ}C$  to  $+350^{\circ}C$  ( $+32^{\circ}F$  to  $+662^{\circ}F$ )



También 6:1 hacia ambos lados, ej.,  $0^{\circ}C$  to  $58^{\circ}C$

#### Ajustes de Cero:

$-50^{\circ}C$  to  $+300^{\circ}C$  ( $-58^{\circ}F$  to  $+572^{\circ}F$ )

#### Señal de Salida

##### Rango:

1-5Vdc (Resistencia de carga 5K-ohm a Circuito Abierto)

4-20 mA nominal; 2.8 mA Mín. y (limitado a 23mA Máx.)

##### Fuente de Energía:

6 Vdc Mín. en el transmisor

42 Vdc Máx. en el transmisor

##### Efecto de Voltage:

$\pm 0.001\%$  del Espectro/Voltage desde 10 a 35 Vdc

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### Resistencia de Lazo (4-20mA RTD):

$$R_L \text{ (K ohm)} = (V_S - 6) / .02 \text{ Amps}$$

### Rendimiento

#### Precisión del Modelo:

± 0.15% del espectro  
(Cuando está calibrado de fábrica 1:1)

± 0.3% del espectro  
(Cuando está calibrado de fábrica 6:1)

#### Linealidad:

± 0.05% del espectro (Con referencia a la temperatura del sensor real)

#### Corriente de Salida Max. (4-20mA RTD):

23mA

#### Corriente de Suministro Máx. (1-5 Vdc RTD):

2.0mA (sin carga)

### Límites de Temperatura:

40 to +85 °C (-40 to +185 °F), operando.

-55 to +100 °C (-67 to +212 °F), almacenado.

### Efecto del Cable de Plomo de Entrada a la RTD:

0.005°C/ohm

### Arraste de Calentamiento:

±0.005% del espectro Máx. (Para  $V_S = 24 \text{ Vdc}$  y  $R_L = 250\Omega$ ; dentro de los 15 segundos)

### Efecto de temperatura ambiente:

±0.025°C/°C

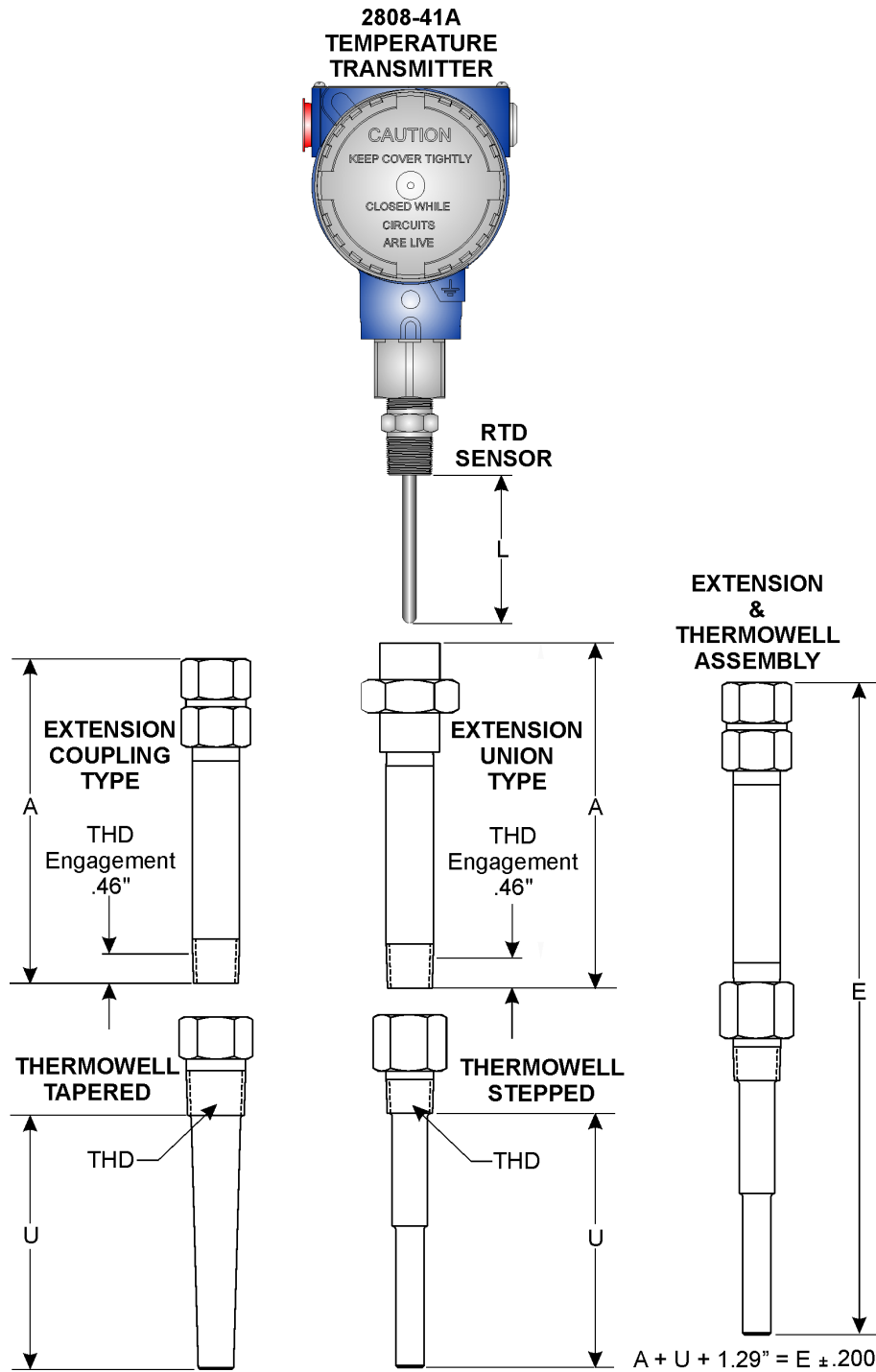
### Humedad:

95% RH sin-condensación @ +70°C (+158°F).

Inmunidad a la RFI

Según SAMA PMC 33.1-1978 sobre un rango de 20-500 MHz

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**Bristol® Transmisor de Temperatura RTD**

**Model Number: 2808-41 A - A B C - D E F**

**2808-41A**

<b>SELECT</b>	<b>DESCRIPTION</b>		<b>CODE</b>
<b>A</b>	<b>RTD MODULE</b>		<b>A</b>
	<b>XRTDMODULE</b>		
10	100 OHM PT (PER IEC 751 Class B)		1
<b>B</b>	<b>INDICATION</b>		<b>B</b>
	<b>XINDICAT</b>		
20	None	<b>NOTE: The Indicator works only with 4 - 20 mA current mode, not voltage.</b>	0
	Local Digital Indicator		1
<b>C</b>	<b>CERTIFICATION</b>		<b>C</b>
30	None		0
	UL / CUL (Exp Proof, NI)	<b>An RTD must be included. See Item "E."</b>	1
<b>D</b>	<b>WARNING PLATE</b>		<b>D</b>
40	None		0
	Russian (Without Indication)		1
	Russian (With Indication)		2
<b>E</b>	<b>RTD OPTION</b>		<b>E</b>
50	No RTD		0
	General Purpose	<b>Specify RTD length in Attachment 2808-R. Spring-loaded RTD requires a thermowell.</b>	1
	Spring Loaded		2
<b>F</b>	<b>EXTENSION/ THERMOWELL</b>		<b>F</b>
60	None		0
	With Extension / Thermowell	<b>Specify in Attachment 2808-W. These options require an RTD.</b>	1

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Attachment 2808-R - A - B			
SELECT	DESCRIPTION		CODE
A B	GENERAL PURPOSE RTD	XRTDGENP	A B
140	2.5" lgth		02
	3.5" lgth		03
	4.5" lgth		04
	5.5" lgth		05
	6.5" lgth		06
	8.5" lgth		08
	9.5" lgth		09
	11.5" lgth		11
	14.5" lgth		14
	17.5" lgth		17
	20.5" lgth		20
	23.5" lgth		23
A B	SPRING LOADED RTD	XRTDSPRING	A B
	2.5" lgth		02
	3.5" lgth		03
	4.5" lgth		04
	5.5" lgth		05
	6.5" lgth		06
	8.5" lgth		08
	9.5" lgth		09
	11.5" lgth		11
	14.5" lgth		14
	17.5" lgth		17
	20.5" lgth		20
	23.5" lgth		23

An RTD ordered, here, will be assembled into the transmitter at the factory.  
**Select sensor by length, "L".**  
**NOTE: For a spring-loaded RTD, "L" is the length when compressed 0.5".**

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Attachment 2808-W - A - B C - D - E - F G			
SELECT	DESCRIPTION		CODE
<b>A</b>	<b>EXTENSION TYPE</b>		<b>A</b>
150	NONE		0
	UNION	Not Avail for UL/CUL Certification XEXUNION	1
	COUPLING	Not Avail for UL/CUL Certification XCOUPLING	2
<b>B C</b>	<b>Extension Length</b>	<b>Extension Type</b>	<b>B C</b>
160	NONE	None Option A = 0	0 0
	3" Length	Union	25
		Coupling	
	3 1/2" Length	Union	30
		Coupling	
	4" Length	Union	35
		Coupling	
	4 1/2" Length	Union	40
		Coupling	
	5" Length	Union	45
		Coupling	
	5 1/2" Length	Union	50
		Coupling	
	6" Length	Union	55
		Coupling	
	7" Length	Union	70
		Coupling	
	8" Length	Union	80
		Coupling	
	9" Length	Union	90
Coupling			

An extension ordered, here, will be assembled to the transmitter, RTD and thermowell at the factory.

**Specify the extension by end-to-end length, "A." Please refer to the diagram on page 3.**

To select an extension-thermowell-spring-loaded RTD combination, use the equation on the next page.

To select an extension-thermowell-spring-loaded RTD combination, use the following equation:

$$L = A + U + 0.5" \quad \text{or,} \quad U = L - A - 0.5"$$

For example, a 6.5" RTD used with a 2.5" thermowell will require a 3.5" extension.

The end-to-end length, "E," of an extension-thermowell combination is the combined length of the two less the thread engagement (0.46" is typically allowed as shown on page 3) and can be determined using the following equation:

$$E = A + U + 1.75" - 0.46" \quad \text{or,} \quad E = A + U + 1.29"$$

For example, the end-to-end length of a 3.5" extension coupled to a thermowell with a 2.5" insertion length is 7.29".

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Attachment 2808-W - A - B C - D - E - F G			
SELECT	DESCRIPTION	CODE	
<b>D</b>	<b>THERMOWELL TYPE</b>	<b>D</b>	
170	No Thermowell	0	
	Stepped	1	
	Tapered	2	
<b>E</b>	<b>THERMOWELL EXTERNAL THREAD</b>	<b>E</b>	
180	None	0	
	1/2" - 14 N.P.T.	<div style="border: 1px solid black; padding: 5px; text-align: center;">                     Not available for a tapered thermowell.                 </div>	1
	3/4" - 14 N.P.T.		2
	1" - 11 1/2 N.P.T.		3

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Attachment 2808-W - A - B C - D - E - F G				
SELECT	DESCRIPTION		CODE	
F G	THERMOWELL INSERTION LENGTH, "U" - see diagram on pg 3		XTHERMO F G	
190	None		0 0	
	<b>2 1/2" Length, "U" for 3 1/2" RTD Length, "L" (without an extension)</b>		04	
	<b>Thermowell Type</b>	<b>Thermowell External Thread</b>		
	Stepped	1/2 " - 14 NPT		Option D = 1, E = 1
	Stepped	3/4" - 14 NPT		Option D = 1, E = 2
	Stepped	1" - 11.5 NPT		Option D = 1, E = 3
	Tapered	3/4" - 14 NPT		Option D = 2, E = 2
	Tapered	1" - 11.5 NPT		Option D = 2, E = 3
	<b>3 1/2" Length,"U" for 4 1/2" RTD Length, "L" (without an extension)</b>		05	
	<b>Thermowell Type</b>	<b>Thermowell External Thread</b>		
	Stepped	1/2 " - 14 NPT		Option D = 1, E = 1
	Stepped	3/4" - 14 NPT		Option D = 1, E = 2
	Stepped	1" - 11.5 NPT		Option D = 1, E = 3
	Tapered	3/4" - 14 NPT		Option D = 2, E = 2
	Tapered	1" - 11.5 NPT		Option D = 2, E = 3
	<b>4 1/2" Length "U" for 5 1/2" RTD Length, "L" (without an extension)</b>		06	
	<b>Thermowell Type</b>	<b>Thermowell External Thread</b>		
	Stepped	1/2 " - 14 NPT		Option D = 1, E = 1
	Stepped	3/4" - 14 NPT		Option D = 1, E = 2
	Stepped	1" - 11.5 NPT		Option D = 1, E = 3
	Tapered	3/4" - 14 NPT		Option D = 2, E = 2
	Tapered	1" - 11.5 NPT		Option D = 2, E = 3

Select the thermowell based on the insertion length, "U."  $U = L - 1"$ .

The total length of the thermowell, end-to-end (sometimes called the "stem length") and which is not shown in the diagram on page 3, is always  $U + 1.75"$ . For example, a thermowell with a 2.5" insertion length, "U," will measure 4.25" end-to-end.



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Attachment 2808-W - A - B C - D - E - F G				
SELECT	DESCRIPTION		CODE	
F G	THERMOWELL INSERTION LENGTH, "U" - see diagram on pg 3		XTHERMO F G	
190	5 1/2" Length, "U" for 6 1/2" RTD Length, "L" (without an extension)		07	
	Thermowell Type	Thermowell External Thread		
	Stepped	1/2" - 14 NPT		Option D = 1, E = 1
	Stepped	3/4" - 14 NPT		Option D = 1, E = 2
	Stepped	1" - 11.5 NPT		Option D = 1, E = 3
	Tapered	3/4" - 14 NPT		Option D = 2, E = 2
	Tapered	1" - 11.5 NPT		Option D = 2, E = 3
	7 1/2" Length, "U" for 8 1/2" RTD Length, "L" (without an extension)		09	
	Thermowell Type	Thermowell External Thread		
	Stepped	1/2" - 14 NPT		Option D = 1, E = 1
	Stepped	3/4" - 14 NPT		Option D = 1, E = 2
	Stepped	1" - 11.5 NPT		Option D = 1, E = 3
	Tapered	3/4" - 14 NPT		Option D = 2, E = 2
	Tapered	1" - 11.5 NPT		Option D = 2, E = 3
<p>Select the thermowell based on the insertion length, "U." <math>U = L - 1"</math>.</p> <p>The total length of the thermowell, end-to-end (sometimes called the "stem length") and which is not shown in the diagram on page 3, is always <math>U + 1.75"</math>. For example, a thermowell with a 2.5" insertion length, "U," will measure 4.25" end-to-end.</p>				

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Attachment 2808-W - A - B C - D - E - F G			
	DESCRIPTION		CODE
F G	THERMOWELL INSERTION LENGTH, "U" - see diagram on pg 3 XTHERMO		F G
190	<b>8 1/2" Length, "U" for 9 1/2" RTD Length, "L" (without an extension)</b>		10
	<b>Thermowell Type</b>	<b>Thermowell External Thread</b>	
	Stepped	1/2" - 14 NPT Option D = 1, E = 1	
	Stepped	3/4" - 14 NPT Option D = 1, E = 2	
	Stepped	1" - 11.5 NPT Option D = 1, E = 3	
	Tapered	3/4" - 14 NPT Option D = 2, E = 2	
	Tapered	1" - 11.5 NPT Option D = 2, E = 3	
	<b>10 1/2" Length, "U" for 11 1/2" RTD Length, "L" (without an extension)</b>		12
	<b>Thermowell Type</b>	<b>Thermowell External Thread</b>	
	Stepped	1/2" - 14 NPT Option D = 1, E = 1	
	Stepped	3/4" - 14 NPT Option D = 1, E = 2	
	Stepped	1" - 11.5 NPT Option D = 1, E = 3	
	Tapered	3/4" - 14 NPT Option D = 2, E = 2	
	Tapered	1" - 11.5 NPT Option D = 2, E = 3	
	<b>13 1/2" Length, "U" for 14 1/2" RTD Length, "L" (without an extension)</b>		15
	<b>Thermowell Type</b>	<b>Thermowell External Thread</b>	
	Stepped	1/2" - 14 NPT Option D = 1, E = 1	
	Stepped	3/4" - 14 NPT Option D = 1, E = 2	
	Stepped	1" - 11.5 NPT Option D = 1, E = 3	
	Tapered	3/4" - 14 NPT Option D = 2, E = 2	
	Tapered	1" - 11.5 NPT Option D = 2, E = 3	
	<b>16 1/2" Length, "U" for 17 1/2" RTD Length, "L" (without an extension)</b>		18
	<b>Thermowell Type</b>	<b>Thermowell External Thread</b>	
	Stepped	1/2" - 14 NPT Option D = 1, E = 1	
	Stepped	3/4" - 14 NPT Option D = 1, E = 2	
	Stepped	1" - 11.5 NPT Option D = 1, E = 3	
	Tapered	3/4" - 14 NPT Option D = 2, E = 2	
	Tapered	1" - 11.5 NPT Option D = 2, E = 3	

Select the thermowell based on the insertion length, "U."  $U = L - 1"$ .

The total length of the thermowell, end-to-end (sometimes called the "stem length") and which is not shown in the diagram on page 3, is always  $U + 1.75"$ . For example, a thermowell with a 2.5" insertion length, "U," will measure 4.25" end-to-end.

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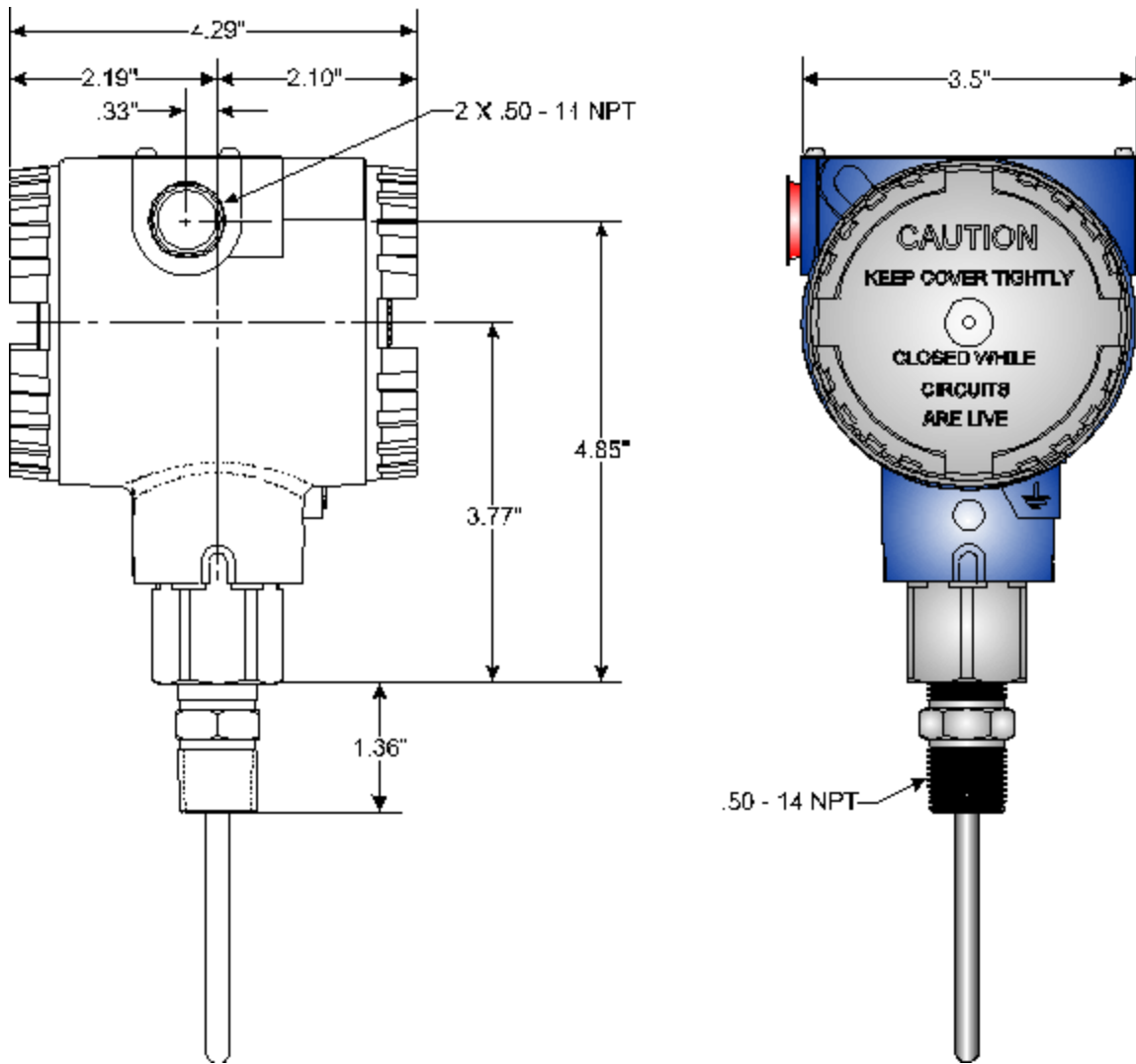
Attachment 2808-W - A - B C - D - E - F G				
	DESCRIPTION		CODE	
F G	THERMOWELL INSERTION LENGTH, "U" - see diagram on pg 3 XTHERMO		F G	
190	19 1/2" Length, "U" for 20 1/2" RTD Length, "L" (without an extension)		21	
	Thermowell Type	Thermowell External Thread		
	Stepped	1/2" - 14 NPT		Option D = 1, E = 1
	Stepped	3/4" - 14 NPT		Option D = 1, E = 2
	Stepped	1" - 11.5 NPT		Option D = 1, E = 3
	Tapered	3/4" - 14 NPT		Option D = 2, E = 2
	Tapered	1" - 11.5 NPT	Option D = 2, E = 3	
	22 1/2" Length, "U" for 23 1/2" RTD Length, "L" (without an extension)		24	
	Thermowell Type	Thermowell External Thread		
	Stepped	1/2" - 14 NPT		Option D = 1, E = 1
	Stepped	3/4" - 14 NPT		Option D = 1, E = 2
	Stepped	1" - 11.5 NPT		Option D = 1, E = 3
Tapered	3/4" - 14 NPT	Option D = 2, E = 2		
Tapered	1" - 11.5 NPT	Option D = 2, E = 3		

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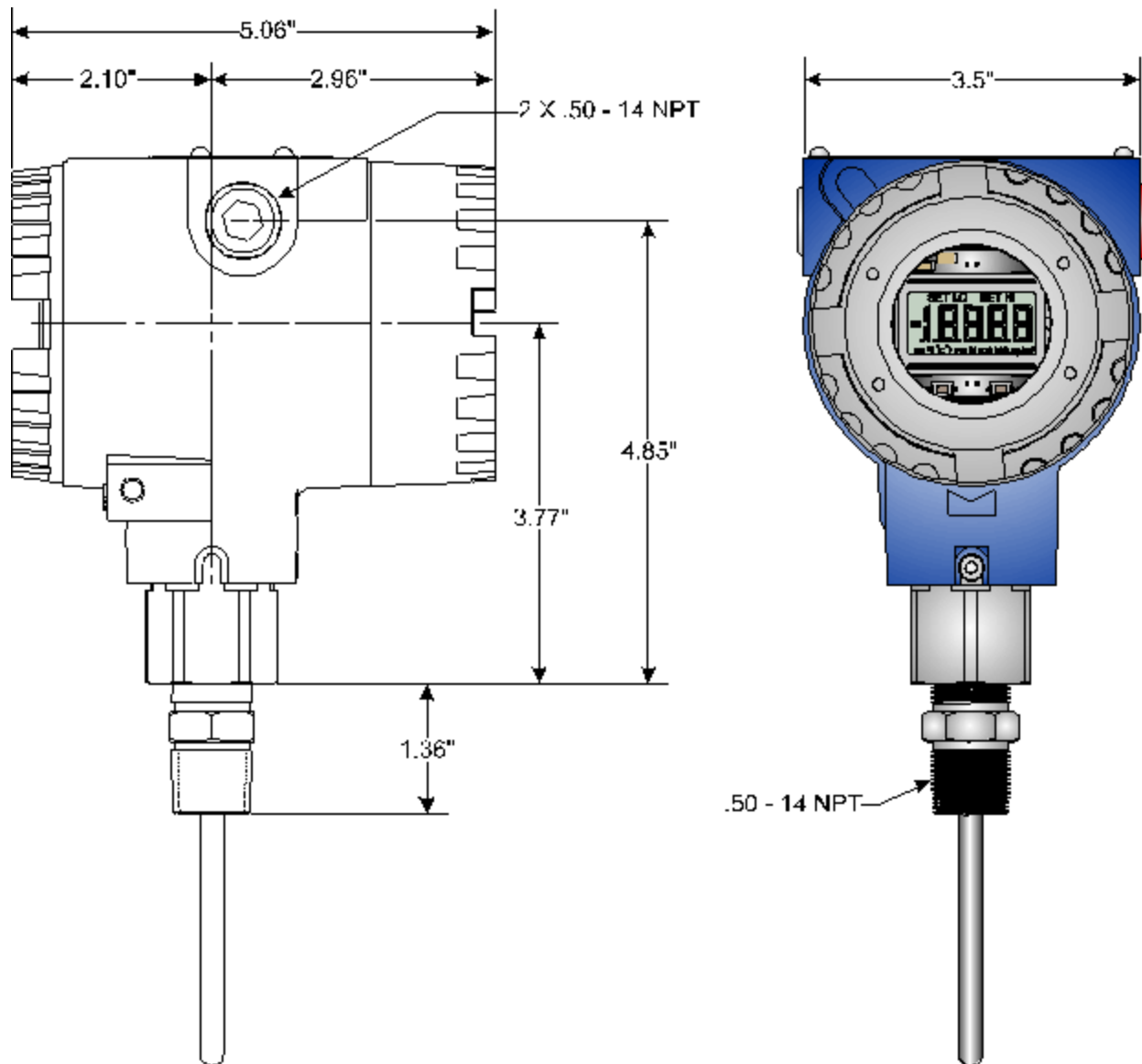
*Dimensiones del Modelo 2808-41A (Sin Opción de Indicador de Lazo)*

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*Dimensiones del Modelo 2808-41A (Con Opcion de Indicador de Lazo)*

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