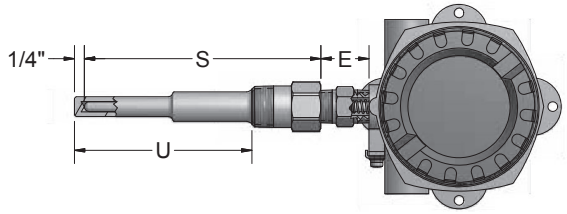
Hazardous Location

Configuration Code XP03
Hazardous Location Flame-Proof-Certified, RTD Assemblies with Thermowells

Flame-Proof RTD Assemblies with Thermowells are made for use in IEC hazardous areas. They are designed to extinguish flames inside the device, eliminating the potential for ignition of flammable mixtures in the surrounding atmosphere. ATEX and IECEx certified assemblies are rated for Ex db IIC Gb and Ex tb IIIC Db locations for applications with process temperatures of 180 °C or less. The required thermowell is available in standard, heavy-duty, and flanged constructions. The assemblies feature 316 stainless steel sheaths. They are available with aluminum or stainless steel explosion-proof connection heads.



ORDER CODES

Example Order Number:

1-0		2-0	2-1	2-2		3-0		4-0		5-0	5-1	5-2	
HL06	-	**R1T185L**	**48**	**3**	-	Select Thermowell Part # from Thermowell Section	-	**FP**	-	**8HN**	**75T-642E,**	**I**	Select Type and Range from back of Section

1-0 Agency Approval

CODE	DESCRIPTION
HL06	ATEX/IECEx flame-proof-certified assembly

2-0 100 Ω Platinum RTD Elements α = 0.003 85 °C^{-1}

CODE		TOLERANCE[1]	TEMP. RANGE
SINGLE	*DUPLEX*		
R1T185L	R1T285L	Grade B	(-200 to 200) °C
R5T185L	R5T285L	(1/5) Class B	(-30 to 150) °C
RBF185L	RBF285L	Class B	(-50 to 200) °C
RAF185L	RAF285L	Class A	(-30 to 200) °C
R1T185H	R1T285H	Grade B	(-200 to 600) °C
RAT185H	RAT285H	Class A	(-100 to 450) °C

[1] Refer to RTD tolerance information in the General Information section for calculations to determine specific tolerance at temperature.

2-1 Sheath Diameters 316 SS

CODE	DIAMETERS (inches)
48	1/4

2-2 Element Connection

CODE	DESCRIPTION
2	2-wire
3	3-wire
4	4-wire

3-0 Thermowell

Select thermowell part number from Thermowell Section.

4-0 Element Options

FP[1]	Spring-loaded element with flame path
FE	Fixed element

[1] Only available with 8HN and 8XU head mounting fittings

5-1 Head Terminations

CODE	DESCRIPTION
75T142E	(4 to 20) mA HART® Field Transmitter with aluminum flame-proof housing
76T71-D10	(4 to 20) mA isolated programmable transmitter with digital display and explosion-proof aluminum housing
76T72-D10	(4 to 20) mA isolated programmable HART® transmitter with digital display and explosion-proof aluminum housing
76T82-D10	(4 to 20) mA dual input HART® Field Transmitter with digital display and explosion-proof aluminum housing
93	Aluminum flame-proof head
94	316L stainless steel flame-proof head
5-2 Options	
SB	1/2" NPT conduit reducer bushing, Aluminum
I	Stainless steel tag
M2	M20x1.5 conduit reducer bushing, Nickel Plated Brass
M5	M25x1.5 conduit reducer bushing, Nickel Plated Brass
T71-00	(4 to 20) mA isolated head-mounted transmitter
T72-00	(4 to 20) mA HART® isolated head-mounted transmitter
T82-00	(4 to 20) mA dual input, isolated HART® head-mounted transmitter
See transmitter ordering information in back of section.	

5-0 Head Mounting Fittings

CODE	DESCRIPTION	CODE	DESCRIPTION
STEEL FITTINGS		*316SS FITTINGS*	
6HN	1/2" x 1/2" NPT hex nipple	8HN	1/2" x 1/2" NPT hex nipple
6PN_	1/2" NPT pipe nipple (specify "E" length in inches)	8PN	1/2" NPT pipe nipple (specify "E" length in inches)
6XU_[1]	1/2" NPT union/nipple (specify "E" length in inches)	8XU_[1]	1/2" NPT union/nipple (specify "E" length in inches)
[1] 3 1/2" Minimum length required. Maximum "E" length is 9".			

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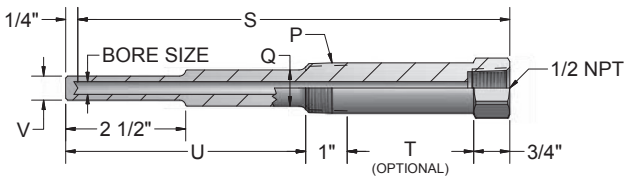
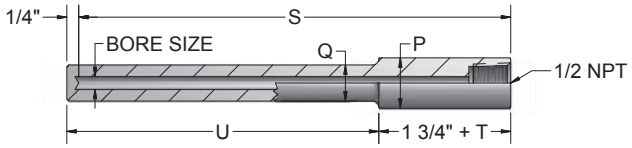
The drilled thermowells listed below are those most commonly found in process applications. Other types and styles are listed later in this section. The thermowells listed below are available as separate component wells and can be ordered by the code numbers listed below. They can also be ordered as a part of a complete sensor assembly. Consult factory for wells with different mounting threads, lengths, and materials.

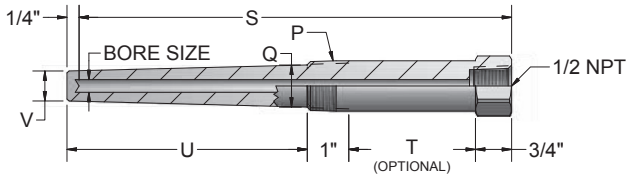
STANDARD-DUTY WELLS



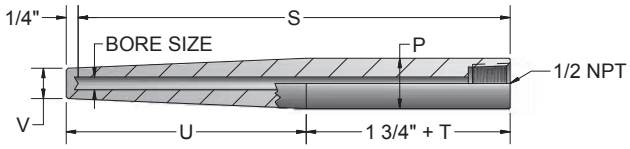
STRAIGHT-SHANK, SOCKET-WELD



HEAVY-DUTY WELLS



WELD-IN WELLS



ORDER CODES

Example Order Number:

1-0	1-1	1-2	1-3	1-4	1-5	1-6
S	4	D	06	08	T2	S

1-0 Well Type

CODE	DESCRIPTION
S	Standard-duty threaded (NPT)
H	Heavy-duty threaded (NPT)
SW	Straight-shank, socket-weld
WI	Weld-in

1-1 Bore Size

CODE	DESCRIPTION
4	0.260 Dia. Bore

1-2 Pipe Size "P"

CODE	DESCRIPTION
C	1/2" Pipe[1]
D	3/4" Pipe
E	1" Pipe
[1] Only available with well type S or H	

1-3 Length Dimensions (inches)

CODE	"S" DIMENSIONS	"U" DIMENSIONS	
		NO LAG	*WITH STANDARD LAG*
04	4	2(1/2)	N/A
06	6	4(1/2)	2(1/2)
09	9	7(1/2)	4(1/2)
12	12	10(1/2)	7(1/2)
15	15	13(1/2)	10(1/2)
18	18	16(1/2)	13(1/2)
24	24	22(1/2)	19(1/2)

1-4 Material

CODE	DESCRIPTION
08	316 stainless steel
09	304 stainless steel

1-5 Optional "T" Lag Dimension

CODE	DESCRIPTION
Leave blank if No Lag is required	
T2	2" Lag standard on 6" well
T3	3" Lag standard on 9, 12, 15, 18, 24" wells
T__	Special Lag specify "T" dimension in inches

1-6 Well Options

CODE	DESCRIPTION
C8	316 stainless steel well cap and chain
C22	Brass well cap and chain
S	Customer specified part number marked on the thermowell - (10 digit maximum)

Code	Description	UNS Number	Trade Names
03	Alloy 600	N06600	Inconel®
04	310 SS	S31000	
05	446 SS	S44600	
07	Alloy 601	N06601	Inconel®
08	316 SS/316 L	S31603	
09	304 SS/304 L	S30403	
22	Brass[1]		
27	Alloy 400	N04400	Monel®
28	Alloy B-3	N10675	Hastelloy®
29	Alloy C-276	N10276	Hastelloy®
31	Nickel 200	N02200	
35	321 SS	S32100	
36	347 SS	S34700	
37	Alloy 800	N08800	Incoloy®
38	Alloy 20	N08020	Carpenter
41	HR-160	N12160	Haynes®
50	Zirconium	R60702	
51	Alloy X		Hastelloy®
56	Fluoropolymer		Fluoropolymer
59	F22	K21590	
60	F11	K11572	
61	A105	K03504	
91	F91	K90901	
[1] Materials available in various alloys - Consult factory.			

Thermowell Options and Specifications

The following options are available on Pyromation thermowells. Please contact our sales department for information and current pricing.

Documentation/Testing	
Certificate of Compliance	C of C
Hydrostatic Test (Internal or External)	ASTM E1003 Compliant
Liquid Dye Penetrant Test	ASTM E165 Compliant, ASTM E1220
Material Test Reports	MTR
NACE	NACE Certification available for applicable materials.
Positive Material Identification (PMI)	X-Ray Fluorescence Spectrometry, ASTM E572, ASTM E2465
Surface Roughness Test	ASME B46.1
Wake Frequency Calculation	ASME PTC 19.3 TW
Weld X-Ray Inspection	ASME B31.3
Services	
Expedited Delivery	Call for Availability
Oxygen cleaning	ASTM G93; CGA G-4.1
Stamping	10 Characters Maximum
Full-Penetration Weld	Performed by welders certified to ASME Section IX, Boiler and Pressure Vessel Code
Electropolish	15 µin R_a Standard
Components/Coatings	
Abrasive Coatings	Stellite #6, Colmonoy #72, Chrome Carbide, D-5 Tungston Carbide
Plug and Chain - Brass	See Catalog Option
Plug and Chain - Stainless Steel	See Catalog Option
Tantalum Jacket	0.015" Thickness Standard
FEP Coating	1-5 mils Thickness Average
Industry Specifications	
Canadian Registration Numbers (CRN)	ASME B31.3 Process Piping
Flanged Thermowells	ASME B16.5 prior to fabrication
Heat Treating	Stress relief, annealing, and custom heat treating available upon request.
Material	ASTM Compliance and other applicable National Standards
Pipe Threads	ASME B1.20.1
Sanitary Thermowells	3-A Sanitary Council Standard. Authorization Number: 487 32 µin R_a Food Grade Surface Finish
Manufacturing Tolerances and Maximums	
"S" Length Maximum	36" maximum for standard drilled thermowells. For over 36” or for multi-piece construction, consult factory.
Bore "Bottom" Shape	"W" (nominal)
Bore Concentricity	± 10% of minimum wall thickness
Bore Depth	±0.020" (through 36")
Bore Diameter	+0.005" / -0.003" (bore sizes 0.125" through 0.5156" I.D.)
Insertion Length	Lengths up to 22.50" ± 0.0625". Lengths from 22.50" through 48" ±0.125". Lengths over 48" ±0.25".
Stem Outside Diameter	±0.010”
Tapered Allowance	Maximum tapered length is 16.00”. “U” dimensions greater than 16.00” in length are manufactured with a straight O.D. beginning below the process connection radius and following throughout with only the last 16.00” of “U” dimension tapered to minor O.D.
Surface Finish	32 µin R_a standard
Internal Threads	1/2"-14 - NPT per ANSI B1.20.1 (1 to 3 turns deep per UL 866 and CSA C22.2 No. 30-M1986)
Marking	Standard marking includes material grade, material traceability codes, and CRN when applicable on drilled barstock and flanged thermowells
Passivation	ASTM A967