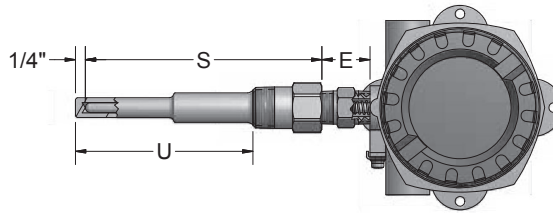


HAZARDOUS LOCATION

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

Explosion-Proof RTD Assemblies with Thermowells are made for use in U.S. and Canadian hazardous areas. They are designed to extinguish flames inside the device, eliminating the potential for ignition of flammable mixtures in the surrounding atmosphere. CSA certified assemblies, dependent on connection head type, meet XP Class I Division I & II; Groups A, B, C, D; DIP Class II Division I; Groups E, F, G; Class III; IP66. 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
HL09 - R1T185L 48 3 - SC - 8HN 75T142C, I

Select Thermowell Part # from Thermowell Section Select Type and Range from back of Section

1-0 Agency Approval

CODE	DESCRIPTION
HL09	CSA US/CAN explosion-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

CODE	DESCRIPTION
SL ^[1]	Spring-loaded element
SC	Self-contained, spring-loaded element

[1] Not available with option 75T, 76T

5-1 Head Terminations

CODE	DESCRIPTION
74	DIN form B aluminum explosion-proof head
75T142C	(4 to 20) mA HART® Field Transmitter with aluminum explosion-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 explosion-proof head
94	316L stainless steel explosion-proof head

5-2 Options

SB	1/2" NPT conduit reducer bushing
I	Stainless steel tag
T31	(4 to 20) mA head-mounted transmitter
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
316SS FITTINGS	
8HN	1/2" x 1/2" NPT hex nipple - 1" length
8PN	1/2" NPT pipe nipple (specify "E" length in inches)
8XU ^[1]	1/2" NPT union/nipple (specify "E" length in inches)
NXU ^[1]	1/2" NPT plated steel union with 316SS fittings (specify "E" length in inches)

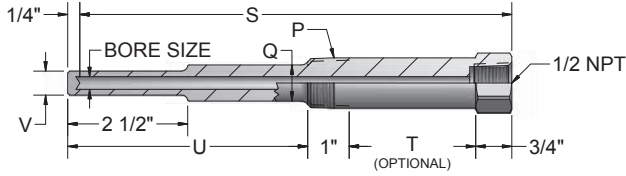
[1] 3 1/2" Minimum length required. Maximum allowable "E" length is 9"

HART® is a registered trademark of the HART Communication Foundation.

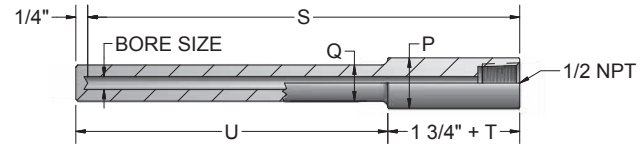


The drilled thermowells listed below are those most commonly found in process applications. Other types and styles are listed later in this section. The thermowells listed below are available as separate component wells and can be ordered by the code numbers listed below. They can also be ordered as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

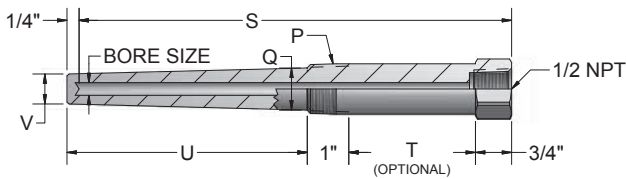
STANDARD-DUTY WELLS



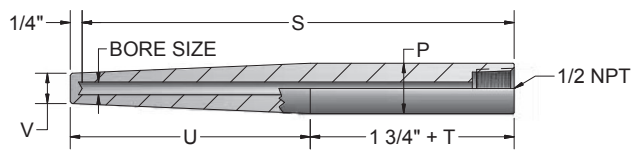
STRAIGHT-SHANK, SOCKET-WELD



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)

1-6 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)

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

1-4 Material

CODE	DESCRIPTION
08	316 stainless steel
09	304 stainless steel

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.			

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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 μ m 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 μ m 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	\pm 10% of minimum wall thickness
Bore Depth	\pm 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" \pm 0.0625". Lengths from 22.50" through 48" \pm 0.125". Lengths over 48" \pm 0.25".
Stem Outside Diameter	\pm 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 μ m 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