Rototherm™

Threaded Thermowells

Threaded Thermowells are threaded into a process pipe or tank, allowing for easy installation and removal when necessary. While this a common mounting method, it has the lowest pressure rating of all mounting configuration options with a maximum process pressure of 500bar (7250psi)

Summary

Thermowells are precison components manufacturered to the highest standard from bar or forgings, to serve as protective devices for primary sensing elements of all types. A wide range of possible products are available. Conditions of pressure, temperature and corrosion resistance govern the size, shape and selection of materials to ensure optimum dependability system responce and accuracy.

Main Applications

- Chemical industry
- Process Technology
- Equiptment manufacturing
- For High chemical demands
- For high process loads

Design Types

- Tapered
- Straight
- Stepped

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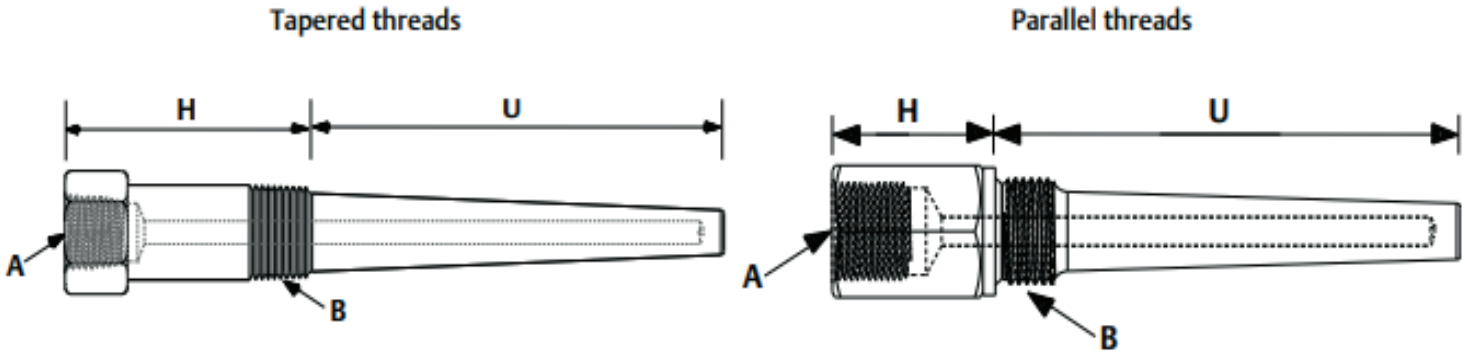
Technical Drawing

Figure 2: Threaded Thermowell Components



A. Instrument connection

B. Process connection

H. Head length

U. Immersion length

Note
Wetted surface includes engaged threads and immersion length (U).

Standard Offering

Model	Units	Immersion Length (U)	Mounting Style	Process Connection	Stem Style	Thermowell Material	Head Length (H)	Instrument Connection Threads	Options
RTWS	X	XXXX	T	X X	X	X X	X X X	X	XX,XXX,XX
1 2 3 4	5	6 7 8 9	10	11 12	13	14 15	16 17 18	19	

Units (5)

English(E)	
Metric (M)	

Immersion Length (U) (6 7 8 9)

XXXX	1- to 42- in. (E) Example:2-in.=0020 42-in.=0420
XXXX	25 to 1165 mm (M) Example: 25 mm = 0025, 1165 mm = 1165

Mounting Style (10)

Threaded

Process Connection (11 12)

AA	½ - 14 NPT
AB	¾ - 14 NPT
AC	1-11.5 NPT
DA	M20 x 1.5p
DB	M20 x 1.5p
DE	½ - in.BSPF (G½)

Stem Style (13)

1	Straight Stem
2	Tapered Stem
3	Stepped Stem

Thermowell Material (14 15)

SC	316/316LSST
SF	304/304L SST
CS	Carbon Steel

Head Length (H) (16 17 18)

XXX	1.75- to 11.25-in.(E) Example: 1.75.in = 017, 10-in.=100
XXX	40 to 225mm (M) Example : 40 mm = 040 225 mm = 225

Instrument Connection Threads (19)

A	½ - 14 NPT
B	½ - 14 NPSM
D	M18 x 1.5p
E	M20 x 1.5p
F	M24 x 1.5p

Options (XX,XXX,XX)

Q5	External Pressure Test
Q35	NACE certification
Q8	Material certification

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Ordering information

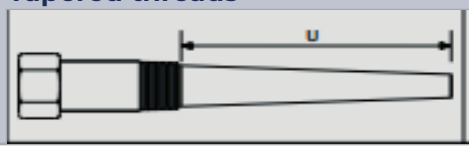
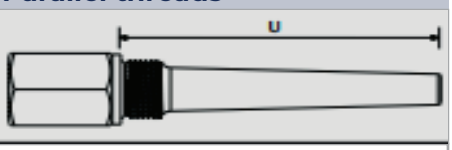
Model

Places 1-4	Description	Details
RTWS	Barstock temperature thermowell	Made with a standard bore diameter of 0.26-in. (6.6 mm) and tip wall thickness of 0.25-in. (6.4 mm)

Dimension units

Place 5	Description	Details
E	English units (in.)	Specifies whether length units will be in inches (in.) or millimeters (mm.)
M	Metric units (mm.)	

Immersion length (U)

Places 6-9	Description	Tapered threads	Parallel threads
			
XXXX	xxx.x-in., 1.00 to 100-in. in ¼-in. increments (when ordered with dimensions units code E) Examples of a 6.25-in. length where the second decimal is dropped off: 0062		
XXXX	xxxx mm, 25 to 2500 mm in 5 mm increments (when ordered with dimension units code M) Example of a 50 mm length: 0050		

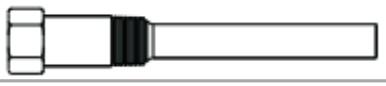
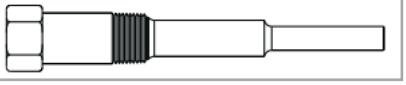
Mounting Style

Place 10	Description
T	Threaded

Process Connection

Places 11-12	Description	Thread Type
AA	½ - 14 NPT	Tapered threads
AC	1 - 11.5 NPT	Tapered threads
AD	1½ - 11.5 NPT	Tapered threads
AE	½ in. BSPT	Tapered threads
AF	¾ in. BSPT	Tapered threads
DA	M20 x 1.5p	Parallel threads
DB	M24 x 1.5p	Parallel threads
DC	M27 x 2p	Parallel threads
DD	M33 x 2p	Parallel threads
DE	½-in. BSPF (G1/½)	Parallel threads
DF	¾-in. BSPF (G¾)	Parallel threads
DG	1-in. BSPF (G1)	Parallel threads

Stem Style

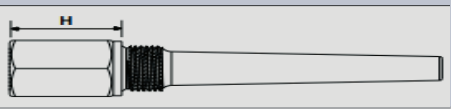
Place 13	Description	Details	Image
1	Straight	Minimum immersion length 1-in. (25 mm) - Tapered thread 1.75-in. (45 mm) - Parallell thread	
2	Tapered	Minimum immersion length 1-in. (25 mm) - Tapered thread 1.75-in. (45 mm) - Parallell thread	
3	Stepped	Minimum immersion length 3-in. (75 mm) - Tapered thread 3.75-in. (95 mm) - Parallell thread	

Ordering information

Thermowell Material

Places 14-15	Description	Details
SC	316/316L dual rated	
SD	316/316L dual rated (NORSOK)	Must order the Q8 Material Certificate to get NORSOK documentation
SF	304/304L dual rated	
CS	Carbon Steel (A-105)	
SG	316Ti SST	
SL	310 SST	
SM	321 SST	
SN	321H SST	
AC	Alloy C-276	
AH	Alloy 400	
AK	Alloy 600	
AM	Alloy 601	
AN	Alloy 625	
AP	Alloy 800	
AR	Alloy 825	
AU	Alloy C-20	
AS	Alloy F44 Mo6	
CA	Chrome-Moly Grade B-11/F-11 Class II	
CB	Chrome-Moly Grade B-11/F-11 Class III	
CC	Chrome-Moly Grade F-91	
NK	Nickel 200	
TT	Titanium Grade 2	
DS	Super duplex SST	
DT	Super duplex SST - NORSOK	
DU	Duplex 2205	
DV	Duplex 2205 - NORSOK	Must order the Q8 Material Certificate to get NORSOK documentation

Head length (H)

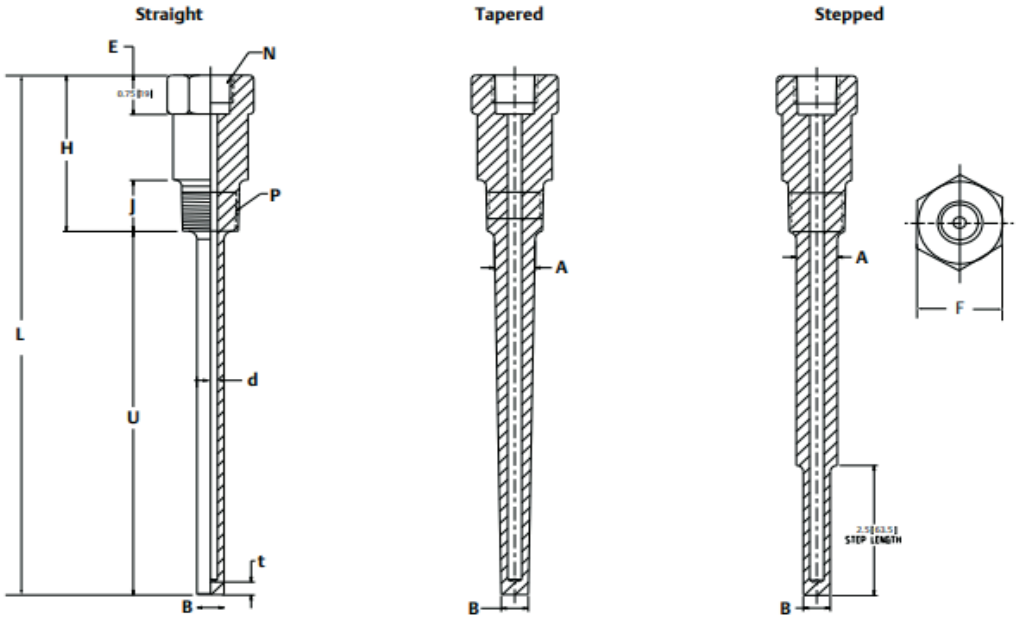
Places 16-18	Description	Tapered threads	Parallel threads
XXX	xx.x-in., 1.75 to 11.25-in. in ¼-in. increments (when ordered with dimension units code E) Examples of a 6.25-in. length where the second decimal is dropped off: 0062 (default head length = 1.75-in.)		
XXX	xxx mm, 40 to 225 mm in 5 mm increments (when ordered with dimension units code M) Example of a 50 mm length: 0050 (default head length = 45 mm)		

Instrument Connection

Place 19	Description	Details	Image
A	½-14 NPT	Female threads	
B	½-14 NPSM		
C	¾-14NPT		
D	M18 x 1.5p		
E	M20 x 1.5p		
F	M24 x 1.5p		
G	G ½ -in. (BSPF)		
H	G ¾-in. (BSPF)		
J	M27 x 2p		
K	M14 x 1.5p		

Thermowell Drawing

Thread Mount Thermowell Drawings (Tapered Thread)



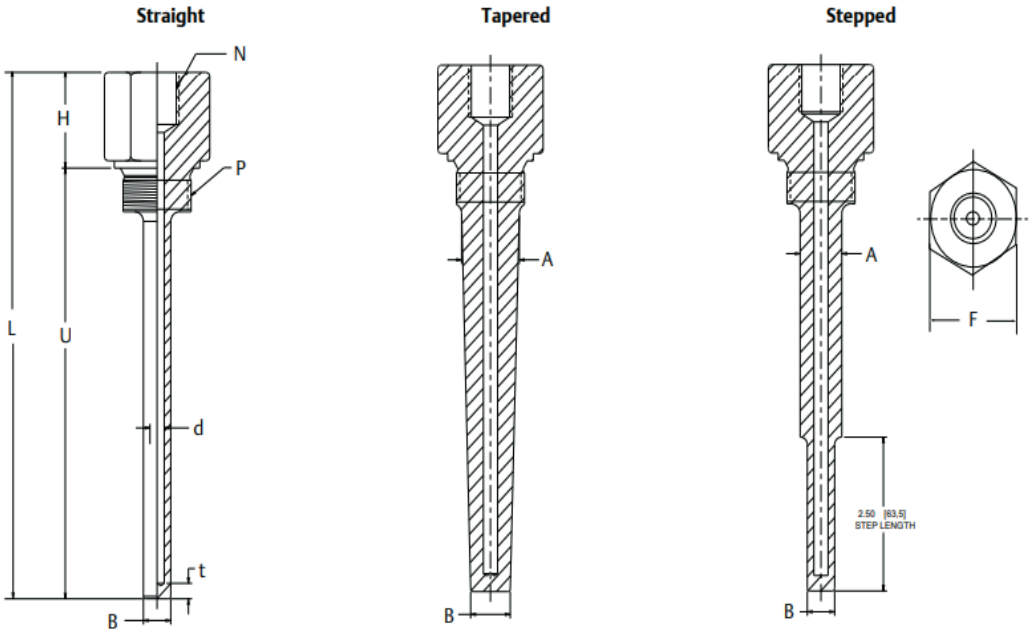
A - Root diameter
B - Tip diameter
E - Wrench allowance
H - Head length
J - Thread allowance
L - Total length (U + H)
N - Instrument connection
P - Process connection
U - Immersion length
d - Bore diameter
t - Tip thickness

Dimensions are in millimeter

Code	Code T, threaded mounting style	Hex size "F"		Wrench flat size "G"		Root diameter stepped stem	Root diameter tapered stem	Tip diameter tapered stem	Root diameter straight stem	Thread specification
	Process connection "P"	Metric units (code M)	English units (code E)	Metric units (code M)	English units (code E)					
AA	½-14 NPT	30	28.6	30	28.6	17	17	12.7	17	NPT per SAE - AS 71051 (reference PS71)
AB	¾-14 NPT	30	28.6	30	28.6	19	22.5	16	18	
AC	1-11.5 NPT	36	34.9	34	31.8	21.5	26.5	18	18	
AD	1½-11.5 NPT	50	50.8	48	44.5	21.5	26.5	18	18	
AE	½-in. BSPT	30	28.6	30	28.6	17	17	12.7	17	THD per ISO 7/1 (BS 21)
AF	¾-in.BSPT	30	28	30	28.6	19	22.5	16	18	
AG	1-in. BSPT	36	34.9	34	31.8	21.5	26.5	18	18	

Thermowell Drawing

Thread Mount Thermowell Drawings (Parallel Thread)



A - Root diameter
B - Tip diameter
E - Wrench allowance
H - Head length
J - Thread allowance
L - Total length (U + H)
N - Instrument connection
P - Process connection
U - Immersion length
d - Bore diameter
t - Tip thickness

Dimensions are in millimeter

Code	Code T, threaded mounting style Process connection "P"	Hex size "F"	Wrench flat size "G"	Root diameter stepped stem	Root diameter tapered stem	Tip diameter tapered stem	Thread specification
DA	½-14 NPT	30	30	17	17	12.7	Thread per BS3643
DB	¾-14 NPT	30	30	19	19	12.7	
DC	1-11.5 NPT	32 or 36	34	19	19	12.7	
DD	1½-11.5 NPT	41	40	21.5	26.5	18	
DE	½-in. BSPT	27	30	17	17	12.7	Thread per ISO 228/1 (BS 2779)
DF	¾-in.BSPT	32	34	19	19	12.7	
DG	1-in. BSPT	41	40	21.5	26.5	18	

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