

# THERMOWELLS

BAR STOCK (FLANGED)



**MODEL CODE : EW2**

## SPECIAL FEATURES

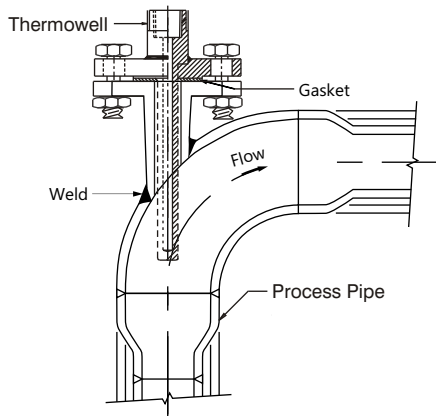
- Design as per PTC 19.3.
- These Thermowells are manufactured from solid bar stock and installed into the process by using a flanged connection.
- This design is suitable for all type of RTD's, Thermocouples, mechanical as well as digital thermometers.
- Full Penetration Welded.
- Available in various shapes like Straight, Straight with reduced tip, Partial taper & full taper.
- All type of flanges and flange facings are available as per ANSI / DIN / JIS & BS.



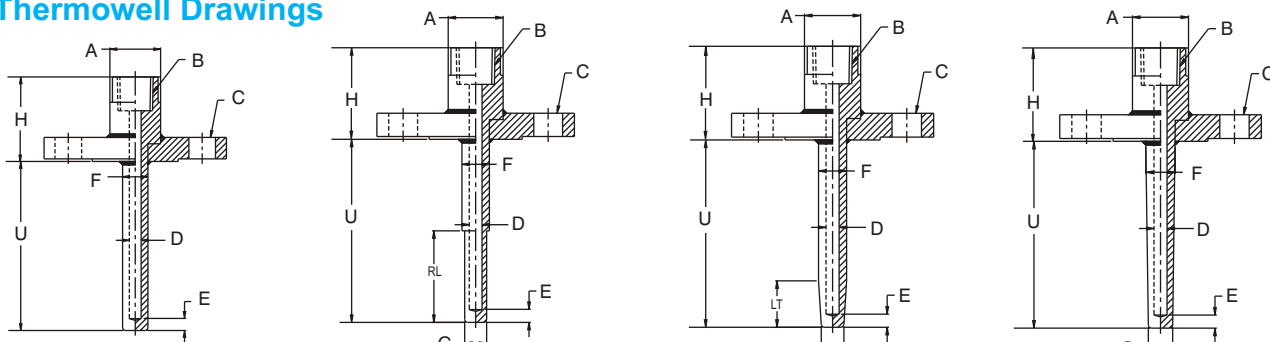
## APPLICATIONS

Chemical plants, Petrochemical Plants, Engineering Plants, On shore, Off shore & other similar process industries.

## Thermowell Installation



## Thermowell Drawings



**S - STRAIGHT**

**R - STRAIGHT REDUCED TIP**

**P - PARTIAL TAPER**

**F - FULL TAPER**

- A - Finished Head Size
- B - Instrument Connection
- C - Flange
- D - Bore Diameter

- E - Tip Thickness
- F - Major Diameter
- G - Minor Diameter
- H - Extension Length

- U - Insertion Length
- RL - Reduced Tip Length
- LT - Taper Length

Notes : • Drawings are not to scale. • All Dimensions are in mm

**THERMOWELL**

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### HOW TO ORDER

#### BASIC MODEL

#### MOUNTING

**S** - STRAIGHT      **R** - STRAIGHT REDUCED TIP      **P** - PARTIAL TAPER      **F** - FULL TAPER

#### WELL MATERIAL

(It is recommended that the well material and flange material (wetted area) should be same.)

<b>LM</b> AISI 316 SS	<b>EP</b> AISI 410 SS	<b>LT</b> Monel	<b>LV</b> Titanium
<b>LN</b> AISI 316L SS	<b>LO</b> AISI 316Ti SS	<b>LU</b> Inconel 600	<b>LX</b> Nickel
<b>LP</b> AISI 304 SS	<b>EO</b> AISI 310 SS	<b>ES</b> Inconel 625	<b>LY</b> HRS 446
<b>ER</b> AISI 304L SS	<b>LQ</b> Carbon Steel	<b>ET</b> Incolloy 800	<b>LZ</b> Alloy 20
<b>EN</b> AISI 321 SS		<b>EU</b> Incolloy 825	<b>LS</b> Hastelloy C

Note : Other Materials are available on request.

#### FLANGE MATERIAL

<b>LM</b> AISI 316 SS	<b>EN</b> AISI 321 SS	<b>LT</b> Monel	<b>LV</b> Titanium
<b>LN</b> AISI 316L SS	<b>LO</b> AISI 316Ti SS	<b>LU</b> Inconel 600	<b>LX</b> Nickel
<b>LP</b> AISI 304 SS	<b>EO</b> AISI 310 SS	<b>ES</b> Inconel 625	<b>LZ</b> Alloy 20
<b>ER</b> AISI 304L SS	<b>LQ</b> Carbon Steel	<b>LS</b> Hastelloy C	

Note : Other Materials are available on request.

#### INSTRUMENT CONNECTION

<b>4BF</b> 1/2" BSP (F)	<b>5TF</b> 3/4" BSPT (F)	<b>6NF</b> 1" NPT (F)	<b>3MF</b> M18 x 1.5 (F)	<b>6MF</b> M24 x 1.5 (F)
<b>4NF</b> 1/2" NPT (F)	<b>5NF</b> 3/4" NPT (F)	<b>6BF</b> 1" BSP (F)	<b>4MF</b> M20 x 1.5 (F)	<b>7MF</b> M27 x 2 (F)
<b>4TF</b> 1/2" BSPT (F)	<b>5BF</b> 3/4" BSP (F)	<b>6TF</b> 1" BSPT (F)	<b>5MF</b> M22 x 1.5 (F)	<b>9MF</b> M33 x 2 (F)
<b>4FF</b> 1/2" PF (F)	<b>5PF</b> 3/4" G (F)	<b>6PF</b> 1" G (F)		
<b>4PF</b> 1/2" G (F)				

Note : Other Connections are available on request.

#### FLANGE TYPE

**1** Slip on      **3** Threaded (Hub type)      **5** Socket Weld  
**2** Welding Neck      **4** Lap Joint

#### FLANGE "C" (SIZE & RATING)

Refer Flange table for code selection.

#### FLANGE FACING TYPE

**R** Raised Face      **F** Flat Face      **J** Ring type joint

#### FLANGE FINISH

**1** - 125 AARH (Standard)      **2** - 63 AARH

Note : Other Flange finish are available on request.

#### EXTENSION / LAGGING LENGTH "H" (In case of welding neck flange & threaded flange, consult factory.)

Please specify in mm For e.g. : for length 50 mm, mention **H50**

#### FINISHED HEAD SIZE "A" (Refer Table 1.1 for selection of Head Size for Thermowell.)

Please Specify in mm

e.g. : For 28 mm Finished head Size, specify **A28**

#### EXTENSION / LAGGING LENGTH "H" (In case of welding neck flange & threaded flange, consult factory.)

**K** HEX HEADED\*      **L** ROUND HEADED      **M** ROUND HEADED WITH SPANNER SLOTS.

\* Maximum "U" Length below Flange will be 250 mm.

#### FINISHED HEAD SIZE "A" (Refer Table 1.1 for selection of Head Size for Thermowell.)

**A** 6.6 mm      **B** 7 mm      **C** 8.5 mm      **D** 9 mm  
**E** 10.5 mm      **F** 11 mm      **G** 13 mm      **H** 13.5 mm

Note : Refer Table 1.3 of Thermowell Design Procedure for dimensions as per PTC 19.3

Example

EW2

F

LM

LM

4NF

1

B39

R

1

H50

A28

M

C

THERMOWELLS

# THERMOWELLS

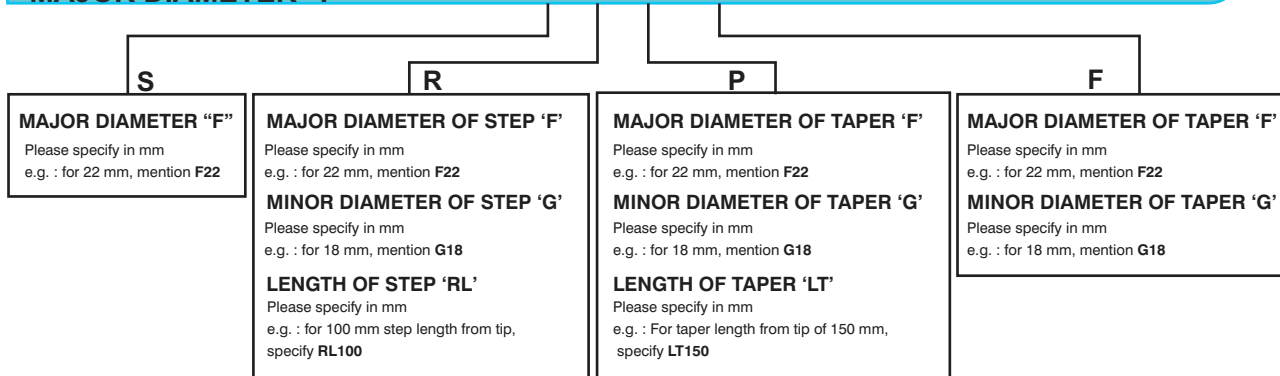
BAR STOCK (FLANGED)



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### MAJOR DIAMETER "F"

F22-G18



Note : Refer Table 1.3 of Thermowell Design Procedure for dimensions as per PTC 19.3

### FLANGE TYPE

E5

Standard Tip Thickness is 5 mm. e.g. : Specify **E5** for 5 mm Tip Thickness  
 For others, please specify in mm.

### FLANGE TYPE

U250

Please specify in mm e.g. : for 250 mm, mention **U250**  
 Note : Refer Table 1.4 of Thermowell Design Procedure for dimensions as per PTC 19.3

### OPTIONS

CX-SX

<b>GG</b> Plug and chain in SS	<b>TC</b> Counter flange with studs, nuts & gasket
<b>FW</b> Electro polishing	<b>CW</b> Marking by Laser
<b>CX</b> Marking by Engraving	<b>SX</b> SS Tag Plate

### LINING & COATINGS (User to specify thickness during enquiry)

<b>FI</b> PTFE Lining*	<b>EW</b> Zirconium Oxide Coating
<b>FM</b> Silicon Carbide Coating	<b>EX</b> Stellite Coating
<b>GK</b> Rubber Lining*	<b>EY</b> PTFE Coating
<b>GJ</b> Tungsten Carbide Coating	

\* Lining will be on wetted area of straight type wells only.

### OVERLAY ON FLANGE RF (User to specify thickness during enquiry)

<b>LS</b> Hastelloy 'C'	<b>LT</b> Monel	<b>LV</b> Titanium	<b>LX</b> Nickel
<b>LR</b> Hastelloy 'B'	<b>LU</b> Inconel 600	<b>LW</b> Tantalum	<b>LZ</b> Alloy 20

### SLEEVE MATERIAL (Wall Thickness : 1 mm)

<b>GM</b> Hastelloy 'C'	<b>FQ</b> Monel	<b>FT</b> Tantalum (0.4 mm)
<b>FO</b> Hastelloy 'B'	<b>FR</b> Inconel 600	<b>FV</b> Alloy 20
<b>FP</b> Nickel	<b>FJ</b> Titanium	

### TESTS & CERTIFICATION

<b>C1</b> Radiography for Bore Concentricity	<b>C8</b> Certification for Hydrogen Service
<b>C2</b> IBR Certification	<b>C9</b> Certification for Oxygen Service
<b>C3</b> Mechanical Test	<b>T1</b> Chemical Composition Test
<b>C4</b> Ultrasonic Test	<b>T2</b> 3.1B Material Conformity Certificate
<b>C5</b> PMI Test	<b>T3</b> Radiography for Welding
<b>C6</b> IGC Test	<b>T4</b> Dye Penetration Test
<b>C7</b> Wake Frequency Calculations as per PTC 19.3#	<b>TF</b> Tested to NACE Standard

#Please Specify Fluid, Max. Pressure, Temperature & Flow velocity for wake frequency calculations as per PTC 19.3

**Ordering Example: EW2 - F - LM - LM - 4NF - 1 - B39 - R - 1 - H50 - A28 - M - C - F22 - G18 - E5 - U250 - CX - SX**

Note : Specifications and dimensions given in this product catalogue represents the state of engineering at the time of printing.

Modifications may take place and materials specified may be replaced by others without prior notice.

**THERMOWELLS**

### MODEL CODE : EW2

Example

### FLANGE TABLE WITH CONNECTION CODES

#### AS PER DIN 2527

DN	PN	CODE	
10	6	A01	
	10	A02	
	16	A03	
	25	A04	
	40	A05	
	64	A06	
	100	A07	
	160	A08	
	250	A09	
	400	A10	
15	6	A11	
	10	A12	
	16	A13	
	25	A14	
	40	A15	
	64	A16	
	100	A17	
	160	A18	
	250	A19	
	400	A20	
20	6	A21	
	10	A22	
	16	A23	
	25	A24	
	40	A25	
25	6	A26	
	10	A27	
	16	A28	
	25	A29	
	40	A30	
	64	A31	
	100	A32	
	160	A33	
	250	A34	
	400	A35	
32	6	A36	
	10	A37	
	16	A38	
	25	A39	
	40	A40	
	40	6	A41
		10	A42
		16	A43
		25	A44
		40	A45
64		A46	
100		A47	
160		A48	
250		A49	
400		A50	
50	6	A51	
	10	A52	
	16	A53	
	25	A54	
	40	A55	
	64	A56	
	100	A57	
	160	A58	
	250	A59	
	400	A60	

DN	PN	CODE
65	6	A61
	10	A62
	16	A63
	25	A64
	40	A65
	64	A66
	100	A67
	160	A68
	250	A69
	400	A70
80	6	A71
	10	A72
	16	A73
	25	A74
	40	A75
	64	A76
	100	A77
	160	A78
	250	A79
	400	A80

#### AS PER JIS - B 2210

NOMINAL SIZE	RATING /CLASS	CODE
10A	5K	B57
	10K	B58
	40K	B59
15A	5K	B60
	10K	B61
	40K	B62
20A	5K	B63
	10K	B64
	40K	B65

NOMINAL SIZE	RATING /CLASS	CODE
25A	5K	B66
	10K	B67
	40K	B68
32A	5K	B69
	10K	B70
	40K	B71
40A	5K	B72
	10K	B73
	40K	B74

NOMINAL SIZE	RATING /CLASS	CODE
50A	5K	B75
	10K	B76
	40K	B77
65A	5K	B78
	10K	B79
	40K	B80
80A	5K	B81
	10K	B82
	40K	B83

#### AS PER DIN 2642

DN	PN	CODE
10	10	A90
		A91
		A92
		A93
		A94
		A95
		A96
		A97
		A98

#### AS PER DIN 2633

DN	PN	CODE
16	16	A81
		A82
		A83
		A84
		A85
		A86
		A87
		A88
		A89

#### AS PER DIN 2635

DN	PN	CODE
40	40	A99
		B01
		B02
		B03
		B04
		B05
		B06
		B07
		B08

#### AS PER ANSI B 16.5

NOMINAL SIZE	RATING /CLASS	CODE
1/2"	150	B09
	300	B10
	600	B11
	900	B12
	1500	B13
	2500	B14
3/4"	150	B15
	300	B16
	600	B17
	900	B18
	1500	B19
	2500	B20

NOMINAL SIZE	RATING /CLASS	CODE
1"	150	B21
	300	B22
	600	B23
	900	B24
	1500	B25
	2500	B26
1 1/4"	150	B27
	300	B28
	600	B29
	900	B30
	1500	B31
	2500	B32

NOMINAL SIZE	RATING /CLASS	CODE
1 1/2"	150	B33
	300	B34
	600	B35
	900	B36
	1500	B37
	2500	B38
2"	150	B39
	300	B40
	600	B41
	900	B42
	1500	B43
	2500	B44

NOMINAL SIZE	RATING /CLASS	CODE
2 1/2"	150	B45
	300	B46
	600	B47
	900	B48
	1500	B49
	2500	B50
3"	150	B51
	300	B52
	600	B53
	900	B54
	1500	B55
	2500	B56

#### AS PER BS - 10

NOMINAL SIZE	TABLE	CODE
1/2"	D	B84
	E	B85
	F	B86
	H	B87
	J	B88
	K	B89
3/4"	D	B90
	E	B91
	F	B92
	H	B93
	J	B94
	K	B95

NOMINAL SIZE	TABLE	CODE
1"	D	B96
	E	B97
	F	B98
	H	B99
	J	C01
	K	C02
1 1/4"	D	C03
	E	C04
	F	C05
	H	C06
	J	C07
	K	C08

NOMINAL SIZE	TABLE	CODE
1 1/2"	D	C09
	E	C10
	F	C11
	H	C12
	J	C13
	K	C14
2"	D	C15
	E	C16
	F	C17
	H	C18
	J	C19
	K	C20

NOMINAL SIZE	TABLE	CODE
2 1/2"	D	C21
	E	C22
	F	C23
	H	C24
	J	C25
	K	C26
3"	D	C27
	E	C28
	F	C29
	H	C30
	J	C31
	K	C32

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