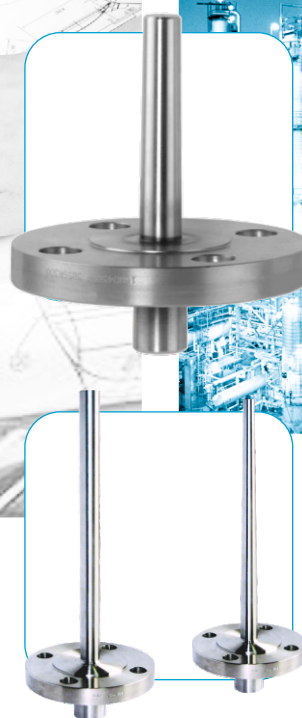




PANAM
ENGINEERING
BEYOND
LIMITS

Temperature Gauges

- PANAM Temperature Gauges are available in SS 316 & SS 316L
- Dial Sizes:- 63mm, 100mm, 115mm, 150mm, 160mm etc
- Protection:- According to IP54 / IP65 / IP66 / IP67
- Filling Liquids:- Dry or Silicon, not for lower connection, maximum range upto 300°C
- Mounting Connections:- Lower / back / every angle (rotatable)
- Accessories options:- Thermowells, dual scales, magnet spring or inductive contacts, calibration certification / Overload protection 130%



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Rev/01/2025

Introduction

PANAM[®] has emerged as renowned name in Global market for 'Instrumentation Fittings & Valves'. Since its inception in 1998 to present day, **PANAM**[®] has added new product every year and has broadened its product portfolio and its clientele base by supplying to potential customers worldwide. Key core values like Timely Delivery, Quality Consistency, Product Improvisation and after sales service has been instrumental in the phase wise evolution of company. Continuous improvement is the key to success, Customer feedback are taken with positive attitude and product are constantly groomed to a new quality and performance level to cope up with the competition. Our products are known for providing high-quality, high-reliability, low-cost options for the oil and gas industry. Over the year, the company has evolved from a product based company to a complete system solution provider. Over the coming years the entity of the company will attain state of the art operational efficiency for maintaining a competitive edge, with the advent increase in the utilization of its products in oil, gas and power sector.

PANAM[®] is having state of the art manufacturing facility span over an area of 1,65,000 sqft with a fleet of CNC machines, VMC machines, Semi-Automatic Lathe machines, High pressure test bench with SCADA control, Configuration centre for transmitters and dedicated R&D Team.

PANAM[®] offers Temperature Gauges in SS 316 & SS 316L, Dial Sizes in 63mm, 100mm, 115mm, 150mm, 160mm etc., Protection according to IP54 / IP65 / IP66/IP67. Dry or silicon, not for lower connection, maximum range upto 300 °C with lower / back / every angle (rotatable), Overload protection 130%.

Contents

• All Stainless Steel Bimetal Thermometer - PBMT	1
• All Stainless Steel Gas Actuated Thermometer - PGTS	3
• Flanged Thermowells - PTWF	5
• Build-Up Thermowells - PTWB	7
• PANAM ® Other Products	10

All Stainless Steel Bimetal Thermometer - PBMT

Nominal size 63 mm, 100 mm, 115 mm, 150 mm or 160 mm
Accuracy: Class 1

Features

- Rugged stainless steel construction
- Fast response
- Protection IP65, IP66, IP67 and IP68
- External zero adjustment
- Dry or liquid filled

Ranges

-50 ... 50 °C up to 0 ... 600 °C
-80 ... 120 °F up to 30 ... 1100 °F

Applications

Chemical and petrochemical industry
Machine and apparatus construction
Food and beverage industry
Pulp and paper industry

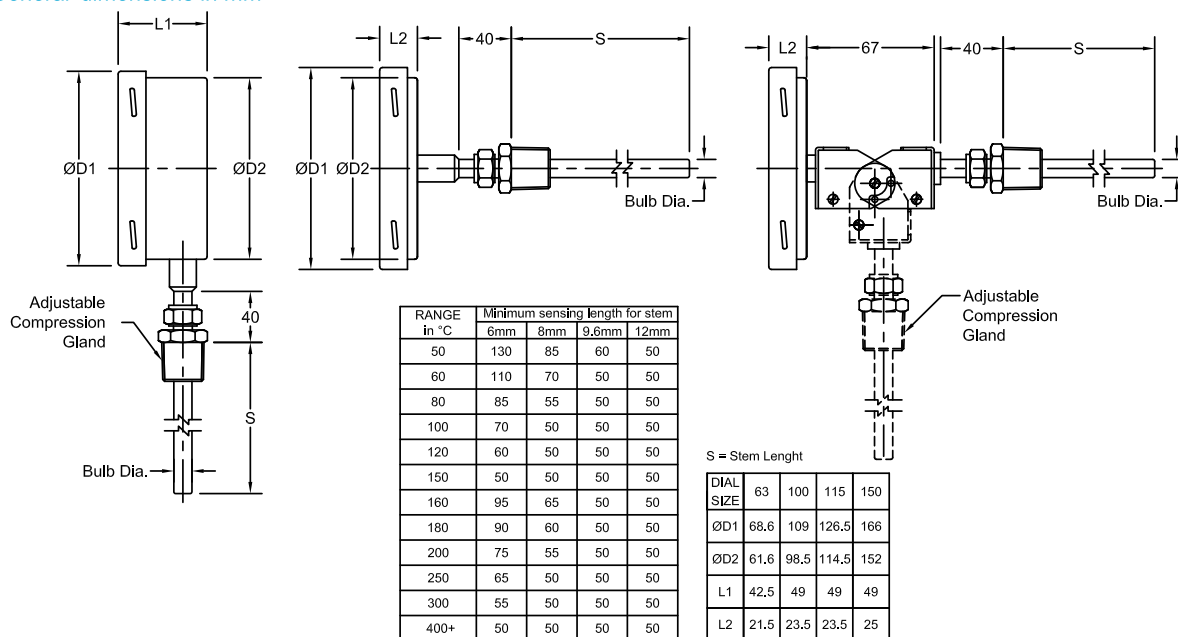


Technical specification	PBMT														
Dial size	63mm			100 mm			115 mm			150 mm			160 mm		
Construction	Cylindrical case with bayonet ring														
Measuring principle	Bimetallic coil														
Range in °C	0/50 0/60 0/80 0/100 0/120 0/150 0/160 0/200 0/250 0/300 0/400 0/450 0/500 0/550 0/600 -10/50 -10/110 -20/40 -20/60 -20/180 -30/50 -30/70 -40/40 -40/60 -40/160 -50/50 -50/100 -50/150														
Temperature limits	Ranges in °F and dual scales on request														
Max. process over temperature	Max. 130 % F.S. Subjected to Max. 625°C Over temperature														
Stem	Max. 130 % F.S. Subjected to Max. 625°C Over temperature														
Diameter	6 mm, 8 mm, 10 mm, 12 mm, others on request														
Length	63 ... 1000 mm, minimum length depends on range, (refer chart)														
Process connection	Plain 1/2" 3/4" 1" BSP / NPT (M) fixed or adjustable														
Connection location	Back / Every angle (rotatable)					Lower / Back / Every angle (rotatable)									
Material															
Connection	Stainless steel 316														
Stem	Stainless steel 316L														
Case/ring	Stainless steel 304, optional 316L														
Window	Instrument glass, optional laminated safety glass														
Dial	Aluminum, black markings on white background														
Pointer	Aluminum, black														
Accuracy	Class 1 as per EN 13190														
Permissible															
Ambient temperature	-25 ... 80 °C														
Storage temperature	-40 ... 60 °C														
Protection	IP65 / IP66 / IP67 / IP68														
Filling liquids	Silicone, not for lower connection, maximum range up to 300 °C														
Accessories, options	Thermowells, dual scale														

All specifications are subject to change without notice.

All Stainless Steel Bimetal Thermometer - PBMT

General dimensions in mm



Order information

Size	Stem diameter	Filling	Process connection		Connection orientation	Stem length	Range	Engineering unit	Options
(63) 63mm	(06) 6 mm	(=) Standard (no filling)	(40) Plain	(75) Adjustable union 1 BSP (M)	(L) Lower ²⁾	63 to 1000 mm (for minimum length refer above table)	0 / 50	°C	(NH) Tagging wired
(100) 100 mm	(08) 8 mm	(L) Liquid filled with silicone max. up to 300 °C (not for lower connection, ambi- ent temperature maximum 65 °C)	(60) Fixed 1/2 NPT (M)	(76) Adjustable union 1/2 NPT (F)	(R) Back		0 / 60		(DA) Dial mark- ing
(115) 115 mm	(10) 10 mm		(61) Fixed 1/2 BSP (M)	(77) Adjustable union 1/2 BSP (F)	(E) Every angle		0 / 80		(CS) Dual scale
(150) 150mm	(12) 12 mm		(70) Adjustable union 1/2 NPT (M)	(90) Adjustable union 1/2 BSP (F)			0 / 100		(SG) Safety glass
(160) 160mm			(71) Adjustable union 1/2 BSP (M)	(110) Adjustable union 1/4 NPT (M)			0 / 120		(YW) 316L hous- ing
			(72) Adjustable union 3/4 NPT (M)	(112) Adjustable union 3/8 BSP (M)			0 / 150		(EZ) External zero ad- justment ¹⁾
			(73) Adjustable union 3/4 BSP (M)	(113) Adjustable union 1/4 BSP (M)			0 / 160		(LAT) Low Ambient Tempera- ture
			(74) Adjustable union 1 NPT (M)				0 / 200		(LTS) Low Tempera- ture Silicon
							0 / 250		
							0 / 300		
							0 / 400		
							0 / 450		
							0 / 500		
							0 / 550		
							0 / 600		
							-10/ 50		
							-10/ 110		
							-20/ 40		
							-20/ 60		
							-20/ 180		
							-30/ 50		
							-30/ 70		
							-40/ 40		
							-40/ 60		
							-40/ 160		
							-50/ 50		
							-50/ 100		
							-50/ 150	Others on request	

1) For size 100mm, 115 mm and 150mm only, and not for connection orientation Lower.

2) Not for size 63mm

How to order

Size	Type	Stem diameter	Filling	Process connection	Connection orientation	Stem length	Range	Engineering Unit	Option
100	PBMT	12	=	70	E	150	0/200	C	NH

All specifications are subject to change without notice.

All Stainless Steel Gas Actuated Thermometer - PGTS

Nominal size 100 mm, 115 mm, 150 mm or 160 mm
Accuracy: Class 1 (1%)

Features

- Rugged stainless steel construction
- Fast response
- Protection IP65, IP66, IP67 and IP68
- High repeatability and small hysteresis
- Dry or liquid filled
- Rigid stem or bulb with capillary

Ranges

-200 ... 50 °C up to 0 ... 800 °C
-330 ... 120 °F up to 30 ... 1450 °F

Applications

Chemical and petrochemical industry
Machine and apparatus construction
Food and beverage industry
Pulp and paper industry

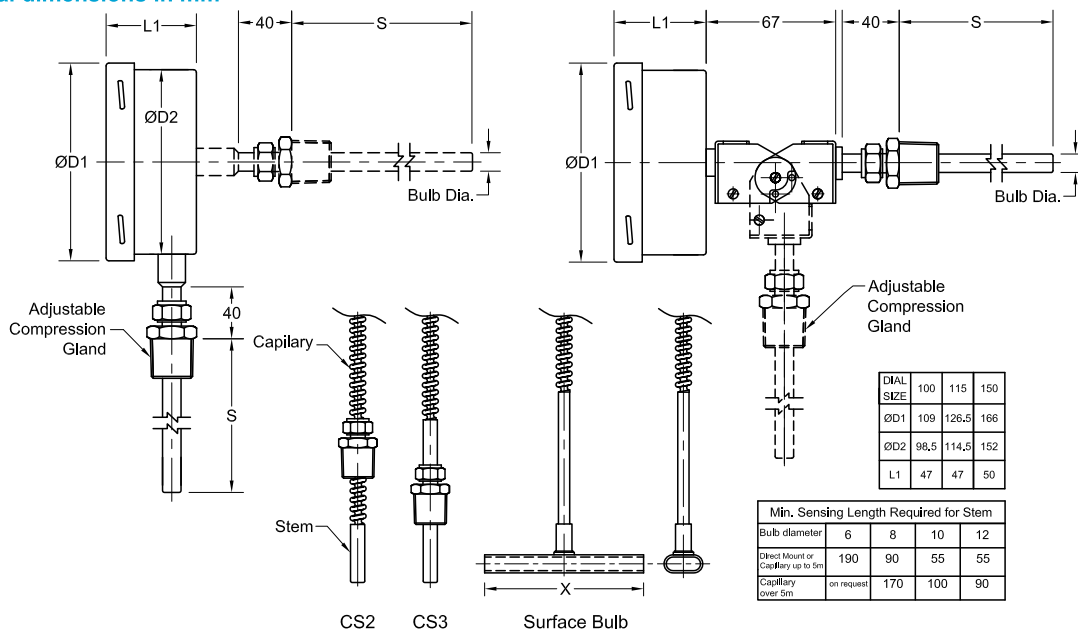


Technical specification	Rigid stem						With capillary					
Dial size in mm	100	115	150	160			100	115	150	160		
Construction	Cylindrical case with bayonet ring											
Measuring principle	Inert gas actuated											
Range in °C	0/60	0/80	0/100	0/120	0/160	0/200	0/250	0/300	0/400	0/500	0/600	0/700
	0/800											
	-10/50	-10/110	-20/40	-20/100	-20/120	-20/180	-30/50	-30/70	-30/170	-40/40		
	-40/60	-40/160	-50/50	-40/60	-40/160	-50/50	-60/40	-80/40	-100/50	-120/40		
	-200/50											
	Ranges in °F and dual scales on request											
Over temperature limit	Max. 130 % F.S. Subjected to Max. 825°C Over temperature											
Stem or bulb diameter	6 mm, 8 mm,10 mm, 12mm, others on request											
Lengths	100 ... 4000 mm, other length on request, min. length depends on bulb diameter											
Capillary length	N.A.						Max. 30 m					
Process connection	Plain 1/4" 3/4" 1" BSP / NPT (M), M20x1.5, M24x1.5, M27x2 Fixed, adjustable or with swivel nut											
Connection location	Back / lower / Every angle											
Material												
Connection	Stainless steel 316											
Stem	Stainless steel 316 (SS 321 for range ≥ 600C)											
Case/ring	Stainless steel 304 , optional 316L											
Capillary							Stainless steel 316					
Armor							Flexible, SS 304, optional PVC covered					
Window	Instrument glass, optional laminated safety glass											
Dial	Aluminum, black markings on white background											
Pointer	Aluminum, black, optional micrometer pointer others on request											
Movement	Stainless steel 304											
Accuracy	Class 1 as per EN 13190											
Protection	IP65 / IP66 / IP67 / IP68											
Filling liquids	Silicone											
Weight dry/filled in kg	Depend on dial size length of stem and capillary											
Accessories, options	Thermowells, dual scales, magnet spring- or inductive contacts, calibration certification											

All specifications are subject to change without notice.

All Stainless Steel Gas Actuated Thermometer - PGTS

General dimensions in mm



Order information

Size	Bulb diameter	Length of bulb/stem	Length of capillary	Process connection	Connection size	Connection orientation	Range	Engineering units	Options	
(100) 100 mm	(06) 6 mm ¹⁾	115 to 4000 mm ²⁾	(R) Rigid stem	(T) Turning nut	(50) 1/2" BSP	(L) Lower	0/ 60	°C	(NH) Tagging wired	
	(08) 8 mm ¹⁾				(75) 3/4" BSP	(B) Back	0/ 80		(DA) Dial marking	
(115) 115mm	(10) 10 mm		(A) Capillary SS armored*	(CS2) Adjustable union connection sliding on capillary	(10) 1" BSP	(E1) Every angle ⁴⁾	0/100		(CS) Dual scale	
					(50N) 1/2" NPT		0/120		(SG) Safety glass	
(150) 150mm	(12) 12 mm		(P) Capillary SS armored with PVC covering*	(CS3) Adjustable union connection sliding on stem	(75N) 3/4" NPT		0/160		(MP) Micro pointer	
					(10N) 1" NPT		0/200		(FX) Front panel	
(160) 160mm							(M20) M20x1.5		0/250	(FW) Surface plate
							(M32) M32x2		0/300	(UF) U-clamp
									0/400	(TM) 2" pipe mounting bracket
									0/500	(EC) Contact type and function (see EC.1)
							0/600 ³⁾	(GR) Glycerin		
							0/700 ³⁾	(GV) Silicon		
				0/800 ³⁾			(YW) 316L housing			
				-10/ 50			(EZ) External zero adjustment			
				-10/110			(STB) Surface Temperature type bulb			
				-20/ 40			(LAT) Low Ambient Temperature			
	-20/100	(LTS) Low Temperature Silicon								
	-20/120									
	-20/180									
	-30/ 50									
	-30/ 70									
	-30/170									
	-40/ 40									
	-40/ 60									
	-40/160									
	-50/ 50									
	-60/ 40									
	-80/ 40									
	-100/ 50									
	-120/ 40									
	-200/ 50									
								*F and dual scale on request	other options on request	

1) Range up to 500 °C only 2) Minimum stem length depends on stem diameter refer above table

3) Stem material will be SS321. Only with bulb diameter 10 mm and 12mm. For rigid stem type minimum length 250mm.

4) for rigid stem type only.

How to order

Size	Type	Bulb diameter	Length of bulb/stem	Length of capillary	Process connection	Connection size	Connection orientation	Range	Engineering unit	Options
100	PGTS	08	125	R	CS3	50N	L	0/100	°C	FW

All specifications are subject to change without notice.

Flanged Thermowells - PTFW

According ANSI/ASME or DIN 43772

Features

- Solid bore construction
- Materials according ISO 15156/NACE MR 01-75
- Selection of materials
- Standard and customer specifications
- DIN and ANSI/ASME process connections

Ratings

DIN up to PN100

ANSI/ASME up to 1500 lbs

Applications

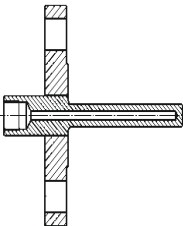
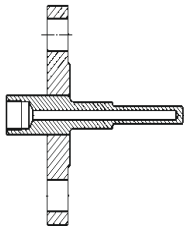
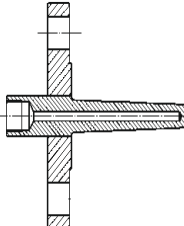
Chemical and petrochemical industry

Machine and apparatus construction

Food and beverage industry

Pulp and paper industry

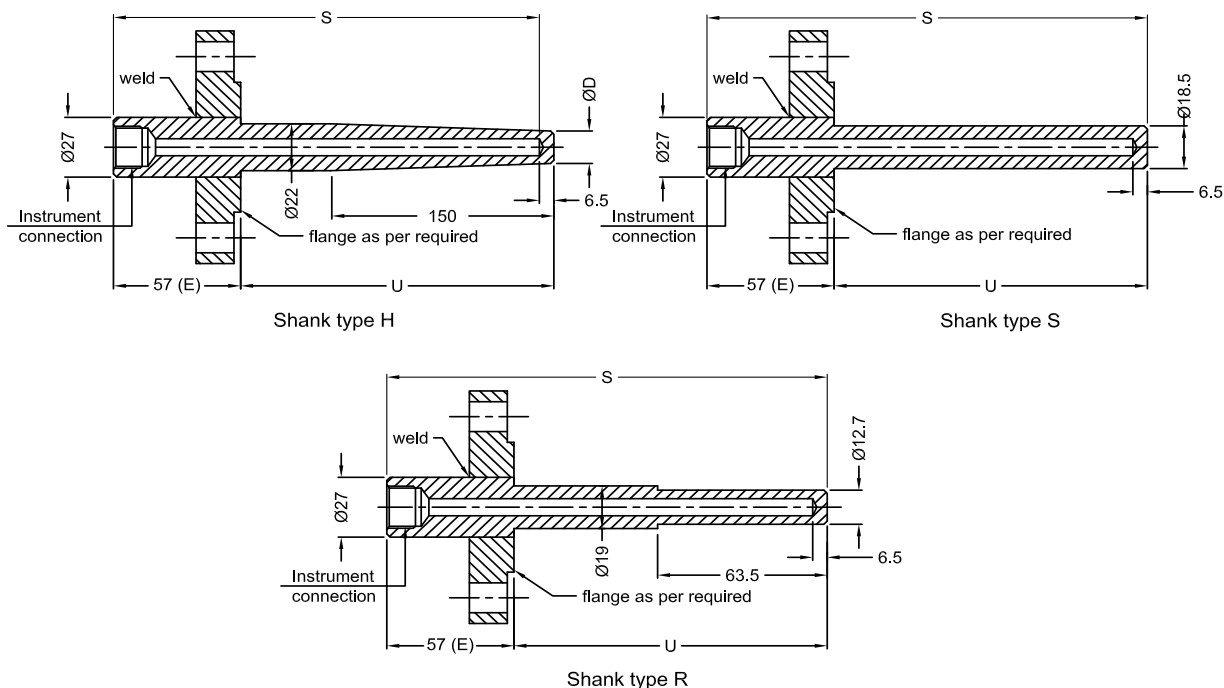


Technical specification	S	R	H
Solid bore design			
	Shank solid bore, flange welded on shank standard. Optional one piece design, built up design or to customer specification		
Construction shank	Straight Stepped Tapered		
Bore diameter in mm	6.6 7.0 9,8 10.5 12.5, others on request		
Pressure rating	Depending on flange rating		
Process connection			
DIN			
Size	DN25, DN40, DN50, DN80, DN100, others on request		
Pressure class	PN10, PN16, PN25, PN40, PN64, PN100, others on request		
ANSI/ASME			
Size [inch]	1, 1½, 2, 3, 4, others on request		
Pressure class [lbs]	150, 300, 600, 900, 1500		
Facing	Raised face, Flat face, Ring joint type)		
	Other forms, connections or standards are available on request		
Instrument connection	½" NPT (F) or ½" BSP (F)		
Material	Carbon steel, Stainless steel 304 (1.4301), 304L (1.4306), 316 (1.4401), 316L (1.4404), 316Ti (1.4571), 321 (1.4541) Monel, Hastelloy B, Hastelloy C, Inconel, Tantalum, Duplex, Nickel Other materials or coatings on request		
Certifications & tests	Material certificate DIN EN 10 204 3.1, Hydrostatic test, dye penetration test, X-ray, Hardness test, ISO 15156/NACE certificate, stress calculation according to ASME PTC 19.3		
Accessories, options	Thermometers, RTD, thermocouples		

All specifications are subject to change without notice.

Flanged Thermowells - PTFW

General Dimensions in mm



Ordering Information

Process connection	U-length in mm	Instrument connection	Extension Length	Type	Bore	Material	Flange facing	Pressure rating	Options
ANSI Flanged (10) 1" (15) 1 1/2" (20) 2" (30) 3"	(U...) Specify length in mm ²⁾ E.g. (250) for u length 250mm	(04T) 1/2" NPT(F) (15T) 1/2" BSP(F)	(=) Standard, 57mm (EX) Specify extension length in mm E.g. (E100) for 100mm extension length	(H) Standard with Welded Flange Tapered Shank (S) Welded Flange Straight Shank (R) Welded Flange Stepped Shank (only bore 0,260 (6,6mm)) other construction such as: Solid machined, built up and to customer specification on request	(6.6) 6.6mm (7.0) 7.0mm (8.5) 8.5mm (9.8) 9.8mm (10.5) 10.5mm ¹⁾ (12.5) 12.5mm ¹⁾	(B) Carbon steel (C) 304 (1.4301) (CL) 304L (1.4306) (S) 316 (1.4401) (SL) 316L (1.4404) (SH) 321 (1.4541) (ST) 316Ti (1.4571) (M) Monel (H) Hastelloy C (N) Nickel (DU) Duplex (IN) Inconel flange material is the same as the shank material unless specified with code (FL.), see options	ANSI Flange (RF) Raised face (FF) Flat face ²⁾ (RTJ) Ring joint type	ANSI Flange 150 300 600 900 1500	(NH) Tagging stamped (CC) Cap & chain stainless steel (BP) Buffed and polished (FL.) Specify flange as per material code (e.g. FLM flange material Monel) Certification (CDWFC) Wake frequency ASME PTC 19.3 (CDW2) Dye penetration test (CDRH) Rockwell hardness test (BC) Bore Concentricity test (XR1) X-ray for weld joint (XR2) X-ray for bore concentricity (CDW9) 100 bar 1 min. (CD3) 3.1 Material certi. (CD5) NACE MR01-75 / ISO 15156-2003 ³⁾ (CDMA) NACE MR 0175 / ISO 15156-2005 ⁴⁾ (CDPMI) Positive material certificate (PWHT) Post weld heat treatment (CDIBR) IBR Certificate
DIN Flanged (DN25) (DN40) (DN50) (DN80) (DN100)			others on request				DIN flange the flange facing depends on the process connection (nominal size and nominal pressure)	DIN flange PN10 PN16 PN25 PN40 PN64 PN100	

1) Not for shank type R (stepped)

2) only for size < 3"

3) only for material (H) and (DU)

4) only for material (SL)

How to order

Process connection	Type	U-length	Instrument connection	Extension length	Shank type	Bore diameter	Material	Flange facing	Pressure rating	Options
10	PTWF	250	04T	=	H	9.8	SL	RF	150	NH

Build-UP Thermowells - PTWB

According ANSI/ASME or DIN 43772

Features

- Materials according ISO 15156/NACE MR 01-75
- Selection of materials
- Standard and customer specifications
- DIN and ANSI/ASME process connections
- Various pipe size

Ratings

DIN up to PN100

ANSI/ASME up to 1500 lbs

Applications

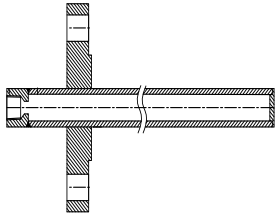
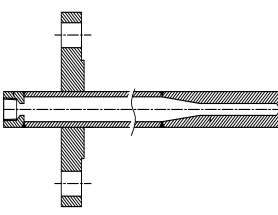
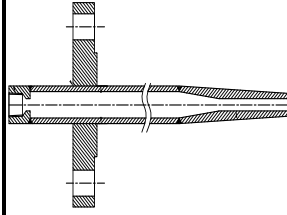
Chemical and petrochemical industry

Machine and apparatus construction

Food and beverage industry

Pulp and paper industry

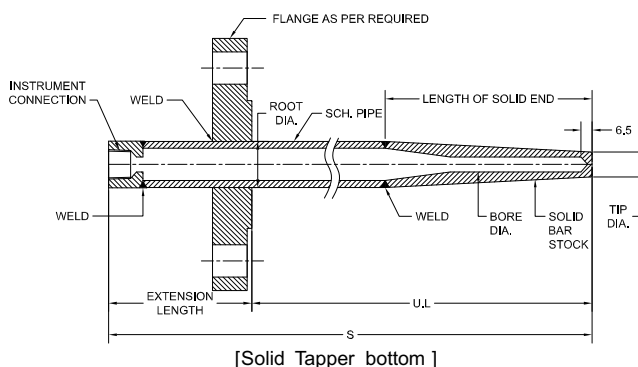
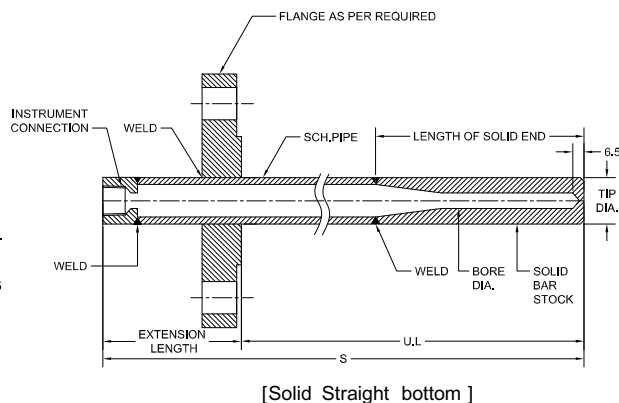
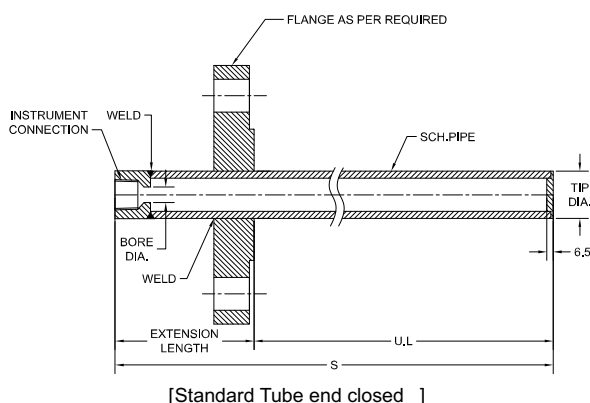


Technical specification	Standard (=)	SB	TB
Built-up design			
	Built up design, Fabricated from pipe optional solid end piece according to customer specification		
Construction shank	Straight	Stepped	Tapered
Bore diameter in mm	6.6 7.0 9,8	10.5 12.5, others on request	
Pressure rating	Depending on flange rating		
Process connection			
DIN			
Size	DN25, DN40, DN50, DN80, DN100, others on request		
Pressure class	PN10, PN16, PN25, PN40, PN64, PN100, others on request		
ANSI/ASME			
Size [inch]	1, 1½, 2, 3, 4, others on request		
Pressure class [lbs]	150, 300, 600, 900, 1500		
Facing	Raised face, Flat face, Ring joint type		
	Other forms, connections or standards are available on request		
Instrument connection	½" NPT (F) or ½" BSP (F)		
Material	Carbon steel, Stainless steel 304 (1.4301), 304L (1.4306), 316 (1.4401), 316L (1.4404), 316Ti (1.4571), 321 (1.4541) Monel, Hastelloy-B, Hastelloy-C, Inconel, Tantalum, Duplex, Nickel Other materials or coatings on request		
Certifications & tests	Material certificate DIN EN 10 204 3.1, Hydrostatic test, dye penetration test, X-ray, Hardness test, ISO 15156/NACE certificate		
Accessories, options	Thermometers, RTD, thermocouples		

All specifications are subject to change without notice.

Build-UP Thermowells - PTWB

General Dimensions in mm



Ordering Information

Process connection	U-length in mm	Instrument connection	Extension length	Bottom end type	Bore	Pipe Type	Material	Flange facing	Pressure rating	Options
ANSI Flanged (10) 1" (15) 1 1/2" (20) 2" (30) 3"	(U...) Specify length in mm ² E.g. (250) for u length 250mm	(04T) 1/2" NPT(F) (15T) 1/2" BSP(F)	(=) Standard, 57mm (EX) Specify Extension Length in mm E.g. (E100) for 100mm extension length	(=) Standard Tube end closed (SBX) Solid Straight bottom (TBX) Solid Tapper bottom	(6.6) 6.6mm (7.0) 7.0mm (8.5) 8.5mm (9.8) 9.8mm (10.5) 10.5mm (12.5) 12.5mm	(D) 1/2" SCH 40 (E) 1/2" SCH 80 (H) 3/4" SCH 80 (K) 1" SCH 80	(B) Carbon steel (C) 304 (1.4301) (CL) 304L (1.4306) (S) 316 (1.4401) (SL) 316L (1.4404) (SH) 321 (1.4541) (ST) 316Ti (1.4571) (M) Monel (H) Hastelloy C (N) Nickel (DU) Duplex (I600) Inconel 600 flange material is the same as the shank material unless specified with code (FL.), see options	ANSI Flange (RF) Raised face (FF) Flat face ¹⁾ (RTJ) Ring joint type	ANSI Flange 150 300 600 900 1500	(NH) Tagging stamped (CC) Cap & chain stainless steel (BP) Buffed and polished (FL.) Specify flange as per material code (e.g. FLM flange material Monel) Certification (CDW2) Dye penetration test (CDRH) Rockwell hardness test (XR1) X-ray for weld joint (XR2) X-ray for bore concentricity (CDW9) 100 bar 1 min. (CD3) 3.1 Material certi. (CD5) NACE MR01-75 / ISO 15156-2003 ³⁾ (CDMA) NACE MR 0175 / ISO 15156-2005 ⁴⁾ (CDPMI) Positive material certificate
DIN Flanged (DN25) (DN40) (DN50) (DN80) (DN100)		others on request		(X) Please specify length of solid bottom in mm, e.g. TB150= Solid Tapper bottom, length 150mm		others on request		DIN flange the flange facing depends on the process connection (nominal size and nominal pressure)	DIN flange PN10 PN16 PN25 PN40 PN64 PN100	

1) only for size < 3"

3) only for material (H) and (DU)

4) only for material (SL)

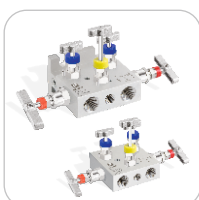
How to order

Process connection	Type	U-length	Instrument connection	Extension length	Bottom end type	Bore	Pipe type	Material	Flange facing	Pressure rating	Options
15	PTWB	1000	04T	=	TB150	9.8	E	SL	RF	150	NH

All specifications are subject to change without notice.

Notes

Other Products



2-3-5 VALVE MANIFOLDS



BELLOW SEAL VALVES



GAUGE ROOT VALVES



NEEDLE VALVES



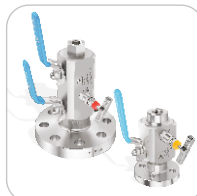
HP NEEDLE VALVES



BALL VALVES



HP BALL VALVES



DOUBLE BLOCK & BLEED VALVES



MONO FLANGE VALVES



CHECK VALVES



RELIEF VALVES



FILTERS



TUBE FITTINGS



PIPE FITTINGS



HP PIPE FITTINGS



SWIVEL FITTINGS



JIC FITTINGS



WELD FITTINGS



HIGH PRESSURE FITTINGS



GAUGE SAVERS



PRESSURE GAUGES



TEMPERATURE GAUGES



PRESSURE TRANSMITTERS



TEMPERATURE TRANSMITTERS



PRESSURE REGULATORS



CONDENSATE POTS



AIR HEADERS



GRAB SAMPLING SYSTEM



PRE-FABRICATED HOOK UPS



FLANGE ADAPTERS



SWIVEL GAUGE ADAPTERS



THERMOWELLS



BLEED PLUGS



DIE-ELECTRIC FITTINGS



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