Thermowells

TWL-0

- Built-up, bar stock/drilled (tapered, straight or stepped shank)
- Up to PN 250
- Up to +800 °C
- Thermowells up to 5000 mm or 1000 mm length (depending on model)

KOBOLD companies worldwide:

ARGENTINA, AUSTRALIA, AUSTRIA, BELGIUM, BULGARIA, CANADA, CHILE, CHINA, COLOMBIA, CZECHIA, EGYPT, FRANCE, GERMANY, GREAT BRITAIN, HUNGARY, INDIA, INDONESIA, ITALY, MALAYSIA, MEXICO, NETHERLANDS, PERU, POLAND, REPUBLIC OF KOREA, ROMANIA, SINGAPORE, SPAIN, SWITZERLAND, TAIWAN, THAILAND, TUNISIA, TURKEY, USA, VIETNAM

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Description

Thermowells are used to protect the thermometer bulb from corosive effects, pressure and high flow of process fluids and allow interchangeability of the thermometer for calibration or replacement without disturbing the process.

Thermowells are made from bar-stock, heavy duty design or from a tube, that is closed at the tip by a welded tip.

Upon request and at extra charge, the thermowells can be provided with:

- Plug and chain (stainless steel)
- PTFE, PFA, HALAR® coatings protection
- Plate roughness (polished) (R_a 0.8 µm)
- Other materials
- Material acc. to NACE MR0103-ISO15156 (MR0175) latest edition-conformity and EN10204 2.1, 2.2, 3.1, 3.2
- Dye penetration test certificate
- Pressure test
- Magnetic particles test
- Positive Material Identification (PMI)
- Bore diameter: 4 ... 20 mm
- Customised marking on thermowell / flange
- Bore concentricity R_x
- Full penetration welding R_x ultrasonic test thermowell
- Calculation acc. to ASME PTC 19.3

Technical Details

Operating pressure:	up to 250 bar (depending on thermowell)
Process connection:	
- Thread:	G ½ male, G ¾ male, G1 male, ½" NPT, ¾" NPT, 1" NPT (others on request)
- DIN-flange:	DN 15, 20, 25, 32, 40, 50 (others on request)
- ANSI flange:	½", ¾", 1", 1 ½", 2" (others on request)
- Weld-in	¾", 1", 1 ¼" (others on request)
- Materials:	1.4404 (others on request)

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Order Details (example: **TWL-0000NBG4A00**)

Model	Sensor type	Sensor type/class	Sensor wiring	Connection head / transmitter	Process connection of temperature sensor[1]
TWL-	**0** = without	**0** = without	**0** = without	**0** = without	**N** = ½" NPT male **G** = G ½ male **X** = special

Order Details (continued)

Thermowell specification				Immersion length and lagging extension length [1]	Options
Thermowell type	**Process connection**	**Process connection size**	**Nominal pressure (process connection)**		
B = cylindrical, multipart, welded **F** = cylindrical, bar stock/drilled **G** = cylindrical, bar stock/drilled with stepped shank **D** = tapered shank, bar stock/drilled **X** = special option	**G** = G-thread **N** = NPT-thread **X** = special	**4** = ½" **5** = ¾" **6** = 1" **X** = special	**A** = PN 25 (only for thermowell B) **B** = PN 100 (only for thermowell G) **C** = PN 250 (only for thermowell D/F)	**0** = without lagging extension "T" **1** = with lagging extension "T"	**0** = without **Y** = special option (specify in clear text)
	B[2] = BW butt welding **S**[3] = SW socket welding	**5** = ¾" **6** = 1" **7** = 1¼" **8** = 1½" **X** = special	**B** = PN 100 (only for thermowell G) **C** = PN 250 (only for thermowell D/F)		
	F = EN1092-1 flange	**4** = DN 15 **5** = DN 20 **6** = DN 25 **7** = DN 32 **8** = DN 40 **9** = DN 50 **X** = special	**1** = PN 63 (not for DN 15) **2** = PN 10/16 **3** = PN 40 **4** = PN 100 (not for DN 15) **X** = special		
	A = ASME B16.5 flange	**4** = ½" (not for thermowell G/D **5** = ¾" **6** = 1" **8** = 1 ½" **9** = 2" **X** = special	**5** = 150 lbs **6** = 300 lbs **7** = 600 lbs (not for ½") **8** = 900 lbs (not for ½") **9** = 1500 lbs (not for ½") **X** = special		

[1] Immersion length "**U**", hole diameter "**i**" and lagging extension "**T**" must be specified in writing.
Please check lengths very precise in order to ensure a perfect match of sensor and thermowell.
[2] Not for thermowell model B, F, G
[3] Not for thermowell model B, D

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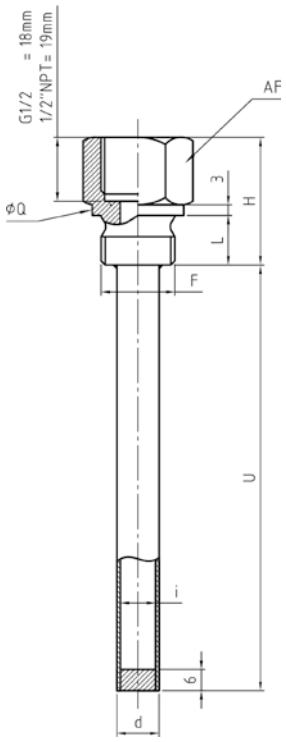
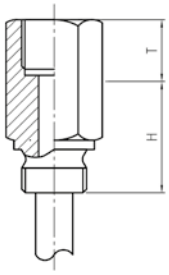
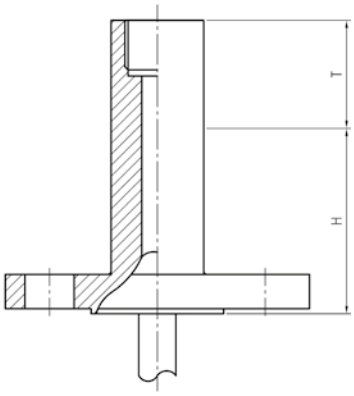
Dimensions Thermowell Model TWL- ...B...

Cylindrical thermowell, welded, with process connection G-thread (max. PN25 at 20 °C)



Lagging Extension "T"





Process connection	Max. total length	AF	F	i	d	H	L	Q
G-thread	5000 mm	27	G ½	10	12	36	14	26
				12	14			
		36	G ¾	10	12	38	16	31.7
				12	14			
		41	G 1	10	12	40	18	39
				12	14			

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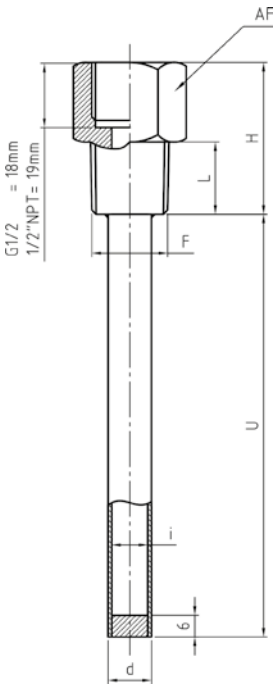
Dimensions Thermowell Model TWL- ... B ...

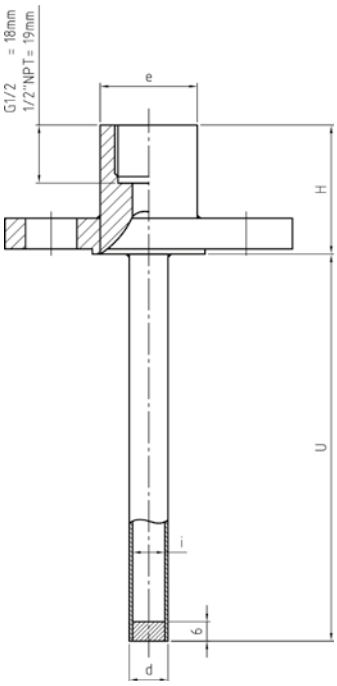
Cylindrical thermowell, welded, with process connection NPT-thread (max. PN 25 at 20 °C)



Process connection	Max. total length	AF	F	i	d	H	L
NPT-thread	5000 mm	27	½" NPT	10	12	42	20
				12	14		
		27	¾" NPT	10	12	43	20
				12	14		
		36	1" NPT	10	12	46	24
				12	14		

Dimensions Thermowell Model TWL- ....B ...

Cylindrical thermowell, welded, with process connection flange acc. EN-1092 or ASME (max. PN 10…40 at 20 °C)



Process connection		Max. total length	i	d	H	e
with flange	ASME B16.5 ½"	5000 mm	10/12	12/14	40	30
	ASME B16.5 ¾"					
	ASME B16.5 1"					
	ASME B16.5 1 ½"					35
	ASME B16.5 2"					
	EN1092-1 DN 15		10/12	12/14	40	30
	EN1092-1 DN 20					
	EN1092-1 DN 25					
	EN1092-1 DN 32					35
	EN1092-1 DN 40					
	EN1092-1 DN 50					

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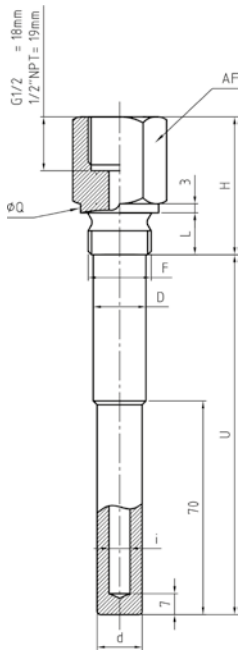
Dimensions Thermowell Model TWL-...G...

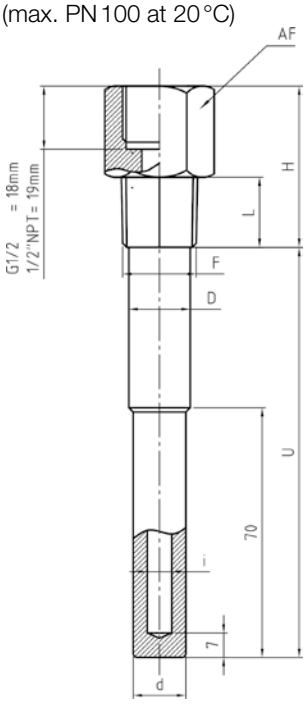
Cylindrical thermowell, bar stock/drilled with
stepped shank and process connection G-thread
(max. PN 100 at 20 °C)



Process connection	Max. total length	AF	F	i	d	D	H	L	Q
G-thread	1000 mm	27	G ½	7-8-9	15	17	46	14	26
				10-12	17	17			
		36	G ¾	7-8-9	15	18		16	31.7
				10-12	18	21			
		41	G 1	7-8-9	15	21	51	18	39
				10-12	18	25			

Dimensions Thermowell Model TWL-...G...

Cylindrical thermowell, bar stock/drilled with
stepped shank and process connection NPT-thread
(max. PN 100 at 20 °C)



Process connection	Max. total length	AF	F	i	d	D	H	L
NPT-thread	1000 mm	27	½" NPT	7-8-9	15	17	46	20
				10-12	17	17		
		27	¾" NPT	7-8-9	15	18		
				10-12	18	21		
		36	1" NPT	7-8-9	15	21	51	24
				10-12	18	25		

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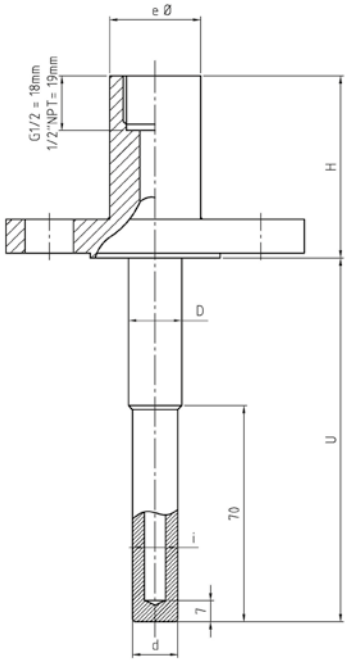
Dimensions Thermowell Model TWL-...G...

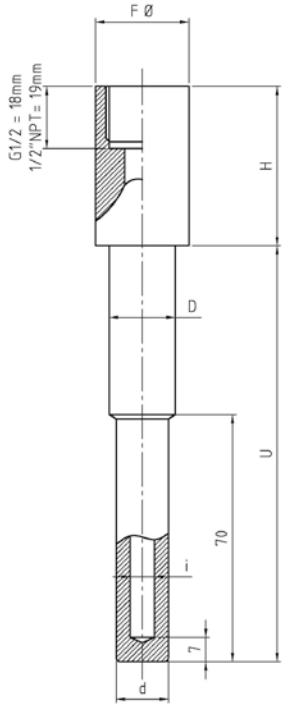
Cylindrical thermowell, bar stock/drilled with stepped shank
and process connection flange acc. EN-1092 or ASME
(max. PN 100 at 20 °C)



Process connection		Max. total length	i	d	D	H	e
Flange	ASME B16.5 ¾"	1000 mm	7-8-9	15	17.5	60	30
			10-12	17.5	17.5		
	ASME B16.5 1"		7-8-9	15	18		
			10-12	18	21		
	ASME B16.5 1½"		7-8-9	15	21		35
			10-12	18	25		
	ASME B16.5 2"		7-8-9	15	21		
			10-12	18	25		
	EN1092-1 DN 15		7	12	15	60	30
	EN1092-1 DN 20		7-8-9	15	17.5	60	30
			10-12	17.5	17.5		
	EN1092-1 DN 25		7-8-9	15	18		
			10-12	18	21		
	EN1092-1 DN 32		7-8-9	15	21		35
			10-12	18	25		
	EN1092-1 DN 40		7-8-9	15	21		
			10-12	18	25		
	EN1092-1 DN 50		7-8-9	15	21		
			10-12	18	25		

Dimensions Thermowell Model TWL-...G...

Cylindrical thermowell, bar stock/drilled with stepped shank and process connection for weld-on
(max. PN 100 at 20 °C)



Process connection		Max. total length	F	i	d	D	H
Socket Welding (SW)	¾"	1000 mm	26.6	7-8-9	15	19	46
				10-12	18		
	1"		33.4	7-8-9	15	22	51
				10-12	18		
	1¼"		42.16	7-8-9	15	29	60
				10-12	18		
	1½"		48.26	7-8-9	15	35	60
				10-12	18		

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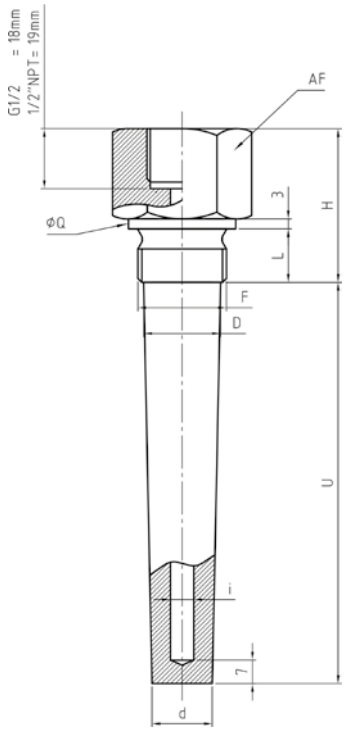
Dimensions Thermowell Model TWL-...D...

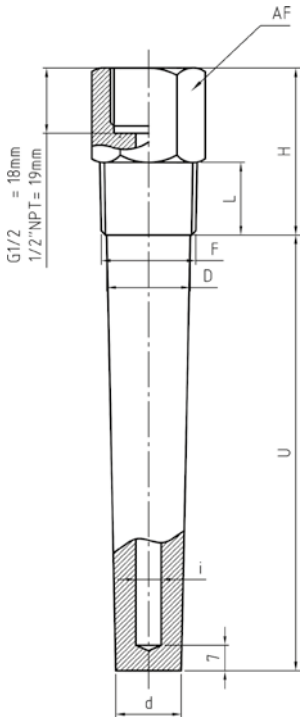
Tapered shank, bar stock/drilled thermowell with process connection G-thread (max. PN 250 at 20 °C)



Process connection	Max. total length	AF	F	l	d	D	H	L	Q
G-thread	1000 mm	27	G ½"	7 - 8 - 9	15	17	46	14	26.6
		36	G ¾"	7 - 8 - 9	18	23	46	20	31.7
				10 - 12	21				
		41	G 1"	7 - 8 - 9	18	29	51	25	39
				10 - 12	21				

Dimensions Thermowell Model TWL-...D...

Tapered shank, bar stock/drilled thermowell with process connection NPT-thread (max. PN 250 at 20 °C)



Process connection	Max. total length	AF	F	l	d	D	H	L
NPT-thread	1000 mm	27	½" NPT	7 - 8 - 9	15	17	46	20
		27	¾" NPT	7 - 8 - 9	18	23	46	20
				10 - 12	21			
		36	1" NPT	7 - 8 - 9	18	29	51	24
				10 - 12	21			

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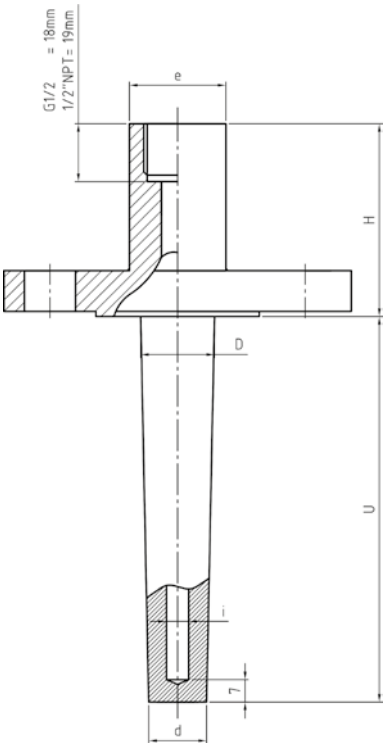
Dimensions Thermowell Model TWL-…D…

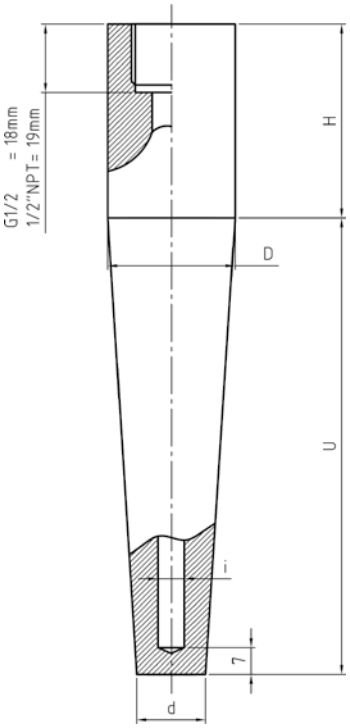
Tapered shank, bar stock/drilled thermowell with process connection flange acc. EN-1092 or ASME (max. PN 250 at 20 °C)



Process connection		Max. total length	i	d	D	H	e
flange	ASME ¾"	1000 mm	7	15	17.5	60	30
	ASME 1"		7-8-9	18	23	60	30
			10-12	21			
	ASME 1 ½"		7-8-9	18	29		35
			10-12	21			
	ASME 2"		7-8-9	18			
			10-12	21			
	EN1092-1 DN 20		7-8-9	15	17.5	60	30
	EN1092-1 DN 25		7-8-9	18	23	60	30
			10-12	21			
	EN1092-1 DN 32		7-8-9	18	29		35
			10-12	21			
	EN1092-1 DN 40		7-8-9	18			
			10-12	21			
	EN1092-1 DN 50		7-8-9	18			
			10-12	21			

Dimensions Thermowell Model TWL-…D…

Tapered shank, bar stock/drilled thermowell with process connection for weld-on (max. PN 250 at 20 °C)



Process connection		Max. total length	l	d	D	H
Butt Welding (BW)	1"	1000 mm	7-8-9	18	25.4	51
			10-12	21		
	1¼"		7-8-9	18	31.7	60
			10-12	21		
	1½"		7-8-9	19.5	38.1	60
			10-12	25.4		

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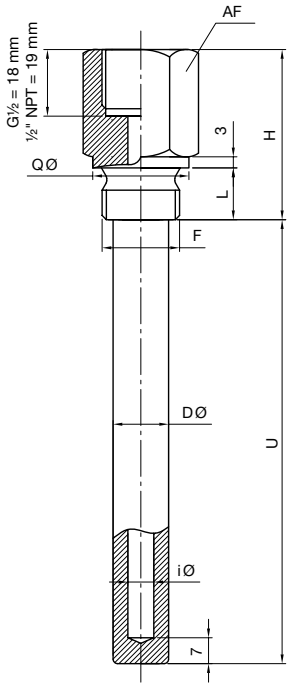
Dimensions Thermowell Model TWL-...F...

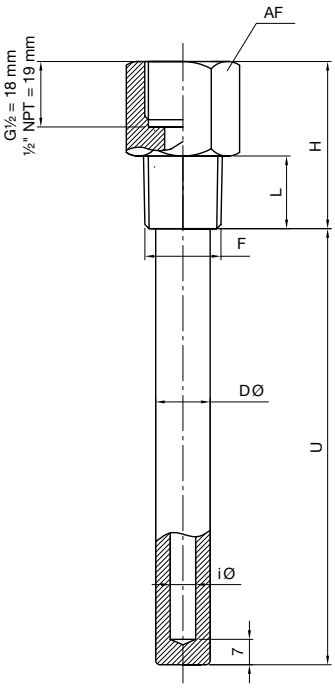
Cylindrical thermowell, bar stock/drilled and process connection G-thread
(max. PN 250 at 20 °C)



Process connection	Max. total length	AF	F	I	D	H	L	Q
G thread	1000 mm	27	G ½"	7-8-9	17	46	14	26,6
		36	G ¾"	7-8-9 10-12	23	46	20	31,7
		41	G 1"	7-8-9 10-12	29	51	25	39

Dimensions Thermowell Model TWL-...F...

Cylindrical thermowell, bar stock/drilled and process connection NPT-thread
(max. PN 250 at 20 °C)



Process connection	Max. total length	AF	F	I	D	H	L
NPT thread	1000 mm	27	½" NPT	7-8-9	17	46	20
		27	¾" NPT	7-8-9 10-12	23	46	20
		36	1" NPT	7-8-9 10-12	29	51	24

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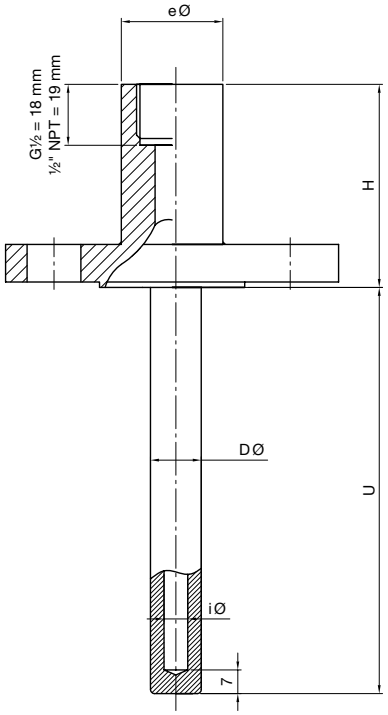
Dimensions Thermowell Model TWL-...F...

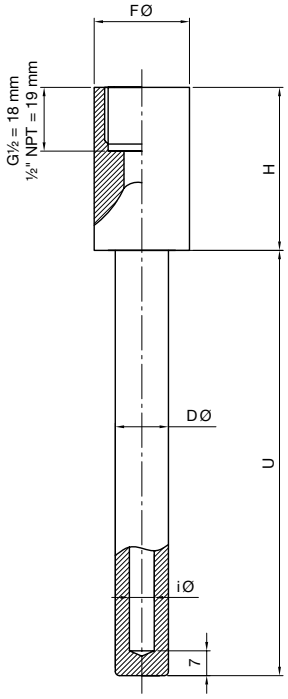
Cylindrical thermowell, bar stock/drilled and process connection flange acc. DIN or ANSI
(max. PN 100 at 20 °C)



Process connection		Max. total length	l	D	H	e
Flange	ANSI B16.5 ¾"	1000 mm	7-8-9	17.5	60	30
			10-12	17.5		
	ANSI B16.5 1"		7-8-9	18		
			10-12	21		
	ANSI B16.5 1 ½"		7-8-9	21		35
			10-12	25		
	ANSI B16.5 2"		7-8-9	21		
			10-12	25		
	EN1092-1 DN 20		7-8-9	17.5	60	30
			10-12	17.5		
	EN1092-1 DN 25		7-8-9	18		
			10-12	21		
	EN1092-1 DN 32		7-8-9	21		35
			10-12	25		
	EN1092-1 DN 40		7-8-9	21		
			10-12	25		
	EN1092-1 DN 50		7-8-9	21		
			10-12	25		

Dimensions Thermowell Model TWL-...F...

Cylindrical thermowell, bar stock/drilled and process connection for weld-on
(max. PN 250 at 20 °C)



Process connection		Max. total length	l	F	D	H
Socket Welding (SW)	1"	1000 mm	7-8-9	33.4	22	51
			10-12			
	1¼"		7-8-9	42.16	29	60
			10-12			
	1½"		7-8-9	48.26	35	60
			10-12			

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