


## Gas filled // Version for industrial applications // with capillary line



### Your advantages

Type	313 WH / 323 TA / 333 TE / 334 KL
	<ul style="list-style-type: none"> <li>• Completely stainless steel - high-quality industrial design</li> <li>• Without electrical auxiliary power</li> </ul>

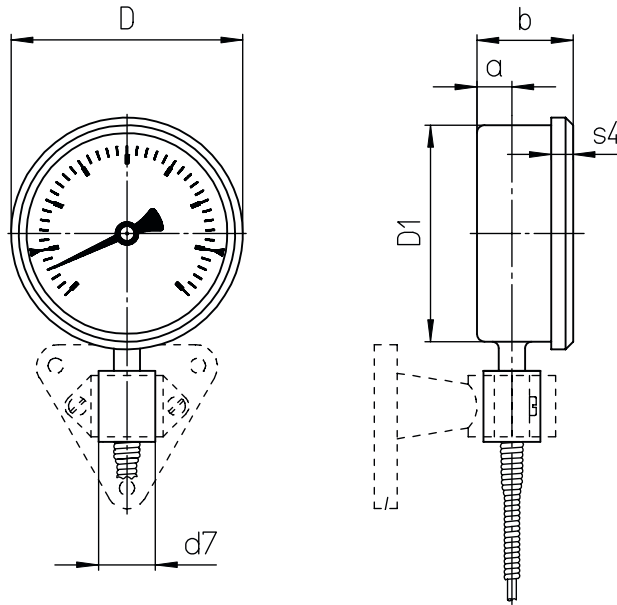
### Technical data

Type	313 WH	323 TA	333 TE	334 KL
Version	With wall bracket	Rear mounting flange	Front mounting flange	With U bracket
Nominal size	Ø 63. 80. 100 or 160 mm			
Display ranges according to EN 13190	Between -40...600 °C			
Accuracy according to EN 13190	Class 1			
Medium / Application area	Liquid and gaseous media			
Capillary line connection	Bottom		Central back	
Immersion tube length	Between 63...430 mm			
Immersion tube diameter	Ø 10 mm			
Capillary line	Ø 2 mm with spiral anti-kink sleeves at both ends, 1...15 m Length			
Process connection	Connection types: A, AK, Da, DN, SN			
Nominal pressure	Max. 25 bar			
Measuring system	Nitrogen filled			
Degree of protection according to EN 60529	IP65			
Medium temperature	See selected display range			
Ambient temperature	-20...60 °C [only indoors]			
Storage temperature	-40...60 °C			
Nominal service temperature (EN 13190)	23 °C ±2 °C			
Approvals				

**Options**

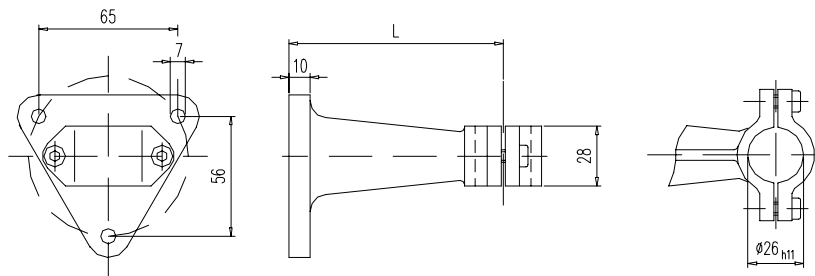
For Type	On request
<b>313 WH /323 TA / 323 / 333 TE / 334 KL</b>	Case filling (silicone oil). Other immersion tube diameter and connection types. Other display ranges and / or special scales, e.g. double scale °C / °F. Capillary line > 15 m

**Type 313 WH with wall bracket**



Dimensions [mm]							Weight [kg]	
NS	a	b	D	D1	d7	s4	unfilled	filled
63	12	39	67	62	26	8	0.36	0.44
80	15	42	86	79	26	8	0.45	0.59
100	15	43	106	99	26	10	0.57	0.76
160	15	51	167	159	26	11	0.88	1.59

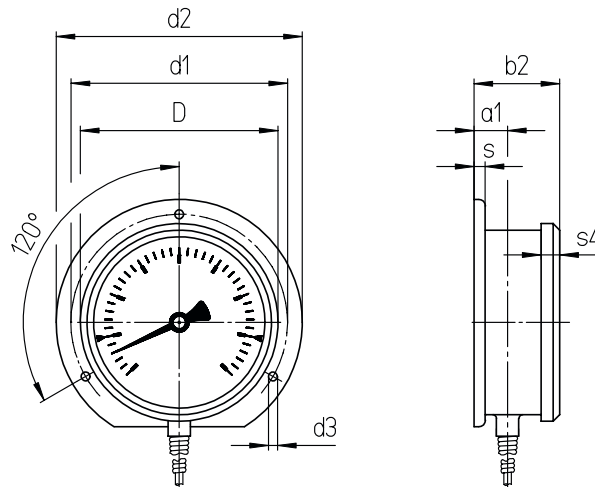
This information is provided as an example and relates to the version with connection type A, Ø 10 mm, and immersion tube length 200 mm and capillary 1 m.



**Wall bracket compliant with DIN 16 281**

Material	Surface finish	L	Form
Aluminium	Black painted	100	H

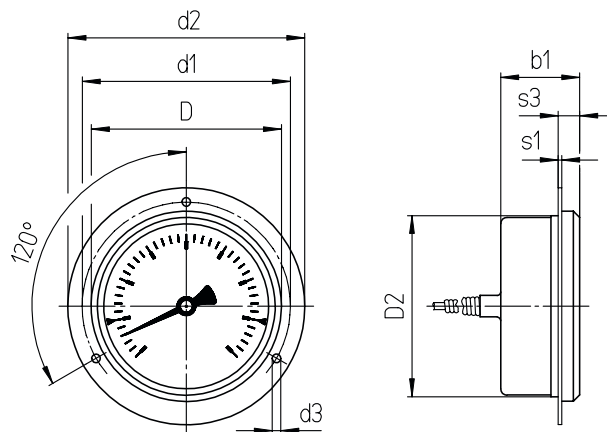
## Type 323 TA rear mounting flange



Dimensions [mm]										Weight [kg]	
NS	a1	b2	b3	D	d1	d2	d3	s	s4	unfilled	filled
63	15	42	42	67	75	85	3.6	5	8	0.36	0.44
80	18	45		86	95	110	4.8	5	8	0.45	0.59
100	18.5	46.5	46.5	106	116	132	4.8	6	10	0.57	0.76
160	18	54	54	167	178	196	5.8	6	11	0.88	1.59

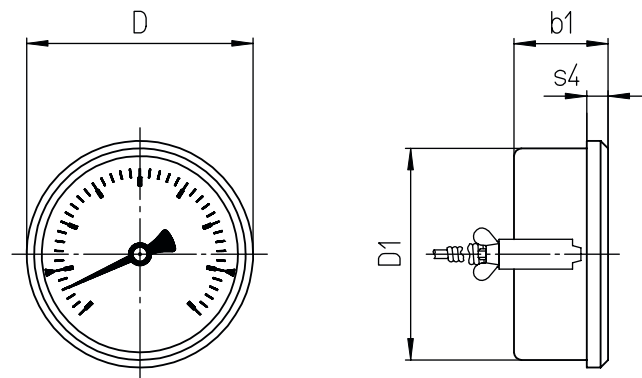
\* Not available for NS 80 mm

## Type 333 TE front mounting flange



Dimensions [mm]									Weight [kg]	
NS	b1	D	D2	d1	d2	d3	s1	s3	unfilled	filled
63	39	67	64	75	85	3.6	1	9	0.36	0.44
80	42	86	81	95	110	4.8	1	9	0.45	0.59
100	43	106	101	116	132	4.8	1	11.5	0.57	0.76
160	51	167		178	196	5.8			0.88	1.59

## Type 334 KL with U bracket



Dimensions [mm]					Weight [kg]	
NS	b1	D	D1	s4	unfilled	filled
63	39	67	62	8	0.36	0.44
80	42	86	79	8	0.45	0.59
100	43	106	99	10	0.57	0.76
160	51	167	159	11	0.88	1.59

This information is provided as an example and relates to the version with connection type A, Ø 10 mm, and immersion tube length 200 mm and capillary length 1 m.

Material	
Housing	Crimped-on ring, Stainless steel 1.4301
Window	Instrument glass
Pointer movement	German silver / brass
Dial	Aluminium white with black scale markings
Pointer	Aluminium black
Capillary line	Stainless steel 1.4571
Material in contact with medium	
Process connection	Stainless steel 1.4571
Immersion tube	Stainless steel 1.4571

# Standard connection types // Immersion tube // for type 313 to 334

## Connection type A

Plain immersion tube, universally usable

## Connection type AK [mm]

With adjustable compression fitting, for direct installation or use with protection tubes compliant with DIN 43772, form 4. 5 and 6 or DIN 16179

G	SW1	SW2	i	Lk
G½ B	27	22	14	42
G¾ B	32	22	16	42
½ NPT	27	22	19	42
¾ NPT	27	22	19	42
M20 x 1.5	27	22	14	42

## Connection type Da [mm]

Union nut, for use with protection tubes compliant with DIN 43772, form 8, 9 and DIN 16179 CS

G	SW	i
G½ B	27	10
G¾ B	32	12
M20 x 1.5	27	10
M27 x 2	32	12

## Connection type DN [mm]

Rotatable male thread with double threaded adapter, for use with protection tubes compliant with DIN 43772, form 4. 5 and 6 or DIN 16179

G1	G2	SW1	SW2	i	Lv
G½ B	G½ B	27	27	14	28
G¾ B	G½ B	32	27	16	28
½ NPT	G½ B	27	27	19	28
¾ NPT	G½ B	27	27	19	28
M20 x 1.5	M20 x 1.5	27	27	14	28
M27 x 2	M20 x 1.5	32	27	16	28

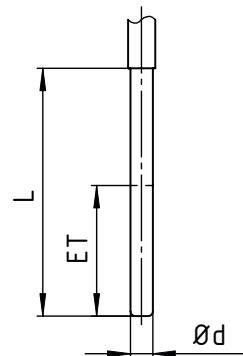
## Connection type SN\* [mm]

Rotatable male thread, for use with protection tubes compliant with DIN 43772, form 4. 5 and 6 or DIN 16179

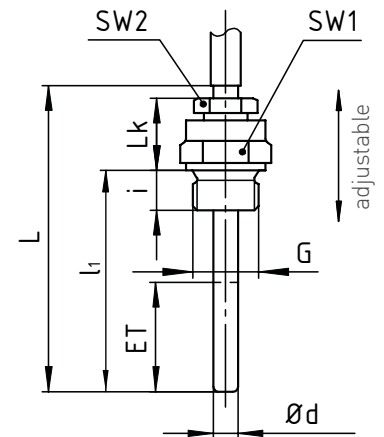
G	SW	i
G½ B	27	20
G¾ B	32	23
M20 x 1.5	27	20
M27 x 2	32	23

\* Non-sealing; protection tube necessary.

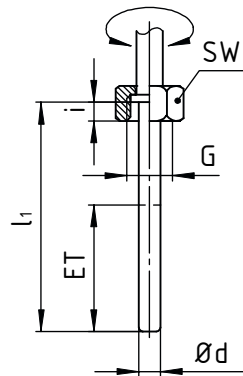
## Connection type A



## Connection type AK

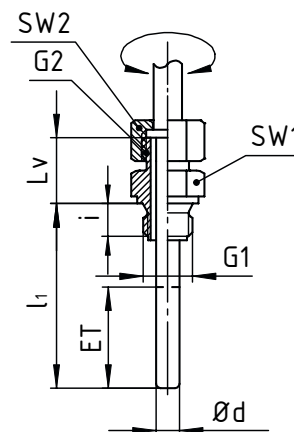


## Connection type Da

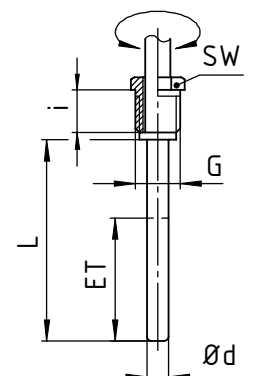


## Connection type DN

Based on: Connection type Da with double threaded adapter



## Connection type SN\*



Connection type	Length	Thread	Capillary length up to 5 m Immersion tube diameter Ø d						Capillary length > 5 m up to 15 m Immersion tube diameter Ø d					
			Up to max 0...500 °C			Over 0...500 °C			Up to max 0...500 °C			Over 0...500 °C		
			12	10	8	12	10	8	12	10	8	12	10	8
<b>All types</b>	ET		35	45	75	75	105	165	53	80	115	150	200	320
<b>A</b>	Lmin		55	65	95	95	125	185	73	100	135	170	220	340
<b>AK</b>	l1min	All standard threads	48	58	88	88	118	178	73	100	135	170	220	340
<b>Da</b>	l1min	All standard threads	55	65	95	95	125	185	73	100	135	170	220	340
<b>DN</b>	l1min	G½, M20 x 1.5	49	59	89	89	119	179	69	96	131	166	216	336
		G¾, M27 x 2	51	61	91	91	121	181	72	99	134	169	219	339
		½ NPT, ¾ NPT	54	64	94	94	124	184	108	135	170	205	255	375
<b>SN*</b>	Lmin	All standard threads	55	65	95	95	125	185	73	100	135	170	220	340

The minimum length Lmin / l1min of the immersion tube is the shortest possible immersion tube length for a given active length ET (bulb) and connection type. The active length ET of the immersion tube (bulb) must be fully immersed in the substance to be measured in order to obtain measurements corresponding to the stated accuracy class.

Order code								
<b>Thermometer version</b>								
With wall bracket	Z	313						
With Rear mounting flange	Z	323						
With Front mounting flange*	Z	333						
With U bracket	Z	334						
<b>Nominal size</b>								
63 mm	Unfilled		1					
	Filled		A					
80 mm	Unfilled		2					
	Filled		B					
100 mm	Unfilled		3					
	Filled		C					
160 mm	Unfilled		4					
	Filled		D					
<b>Material housing</b>								
Stainless steel 1.4301				2				
<b>Display range</b>								
-40...40 °C					44			
-40...60 °C					46			
-30...50 °C					35			
-20...60 °C					26			
-20...80 °C					28			
0...80 °C					08			
0...100 °C					10			
0...120 °C					12			
0...160 °C					16			
0...200 °C					20			
0...250 °C					25			
0...300 °C					30			
0...400 °C					40			
0...500 °C					50			
0...600 °C					60			
<b>Connection type / Immersion tube length</b>								
Please see next page and insert here						xxxxxx		
<b>Capillary line length</b>								
Length in meter								
-								
<b>Capillary protection</b>								
Without capillary protection (with spiral anti-kink sleeves on both ends)								B
With stainless steel spiral protection								C
With plastic jacket								D
<b>Example order number</b>	<b>Z</b>	<b>313</b>	<b>1</b>	<b>2</b>	<b>44</b>	<b>28033B</b>	<b>2</b>	<b>B</b>

\* Not available for NS 160 mm.

Connection types		Add article number into order code				
<b>Connection type A, Plain immersion tube Ø 10 mm</b>						
<b>Immersion tube length L [mm]</b>	<b>Plain</b>					
108	06310B					
145	10010B					
205	16010B					
295	25010B					
445	40010B					
<b>Connection type AK, adjustable compression fitting with immersion tube Ø 10 mm</b>						
<b>Immersion tube length l1 [mm]</b>	<b>G½</b>	<b>G¾</b>	<b>M20 x 1.5</b>	<b>½ NPT</b>	<b>¾ NPT</b>	
63	06392B	06393B	06397B	0639BB	0639CB	
100	10092B	10093B	10097B	1009BB	1009CB	
160	16092B	16093B	16097B	1609BB	1609CB	
250	25092B	25093B	25097B	2509BB	2509CB	
400	40092B	40093B	40097B	4009BB	4009CB	
<b>Connection type Da, Union nut with immersion tube Ø 10 mm</b>						
<b>Immersion tube length l1 [mm]</b>	<b>G½</b>	<b>G¾</b>	<b>M20 x 1.5</b>	<b>M27 x 2</b>		
89* / 93**	08932B	09333B	08937B	09339B		
126* / 130**	12632B	13033B	12637B	13039B		
186* / 190**	18632B	19033B	18637B	19039B		
276* / 280**	27632B	28033B	27637B	28039B		
426* / 430**	42632B	43033B	42637B	43039B		
<b>Connection type DN, rotatable male thread with double threaded adapter with immersion tube Ø 10 mm</b>						
<b>Immersion tube length l1 [mm]</b>	<b>G½</b>	<b>G¾</b>	<b>M20 x 1.5</b>	<b>M27 x 2</b>	<b>½ NPT</b>	<b>¾ NPT</b>
63	06342B	06343B	06347B	06349B	0634BB	0634CB
100	10042B	10043B	10047B	10049B	1004BB	1004CB
160	16042B	16043B	16047B	16049B	1604BB	1604CB
250	25042B	25043B	25047B	25049B	2504BB	2504CB
400	40042B	40043B	40047B	40049B	4004BB	4004CB
<b>Connection type SN, rotatable male thread with immersion tube Ø 10 mm</b>						
<b>Immersion tube length L [mm]***</b>	<b>G½</b>	<b>G¾</b>	<b>M20 x 1.5</b>	<b>M27 x 2</b>		
80	08062B	08063B	08067B	08069B		
140	14062B	14063B	14067B	14069B		
230	23062B	23063B	23067B	23069B		
380	38062B	38063B	38067B	38069B		

\* With G½ or M20 x 1.5    \*\* With G¾ or M27 x 2    \*\*\* Installation length L depends on thread

On this page mentioned lengths are subject to technical feasibility; please observe the minimum immersion tube lengths of standard connection types