

- SIKA thermometers
- SIKA glass inserts for replacement
- Diesel engine protection tubes
- Diesel engine thermometers
- KombiTemp® dial thermometers
- Bimetal dial thermometers
- Pressure gauges



MECHANICAL MEASURING INSTRUMENTS →

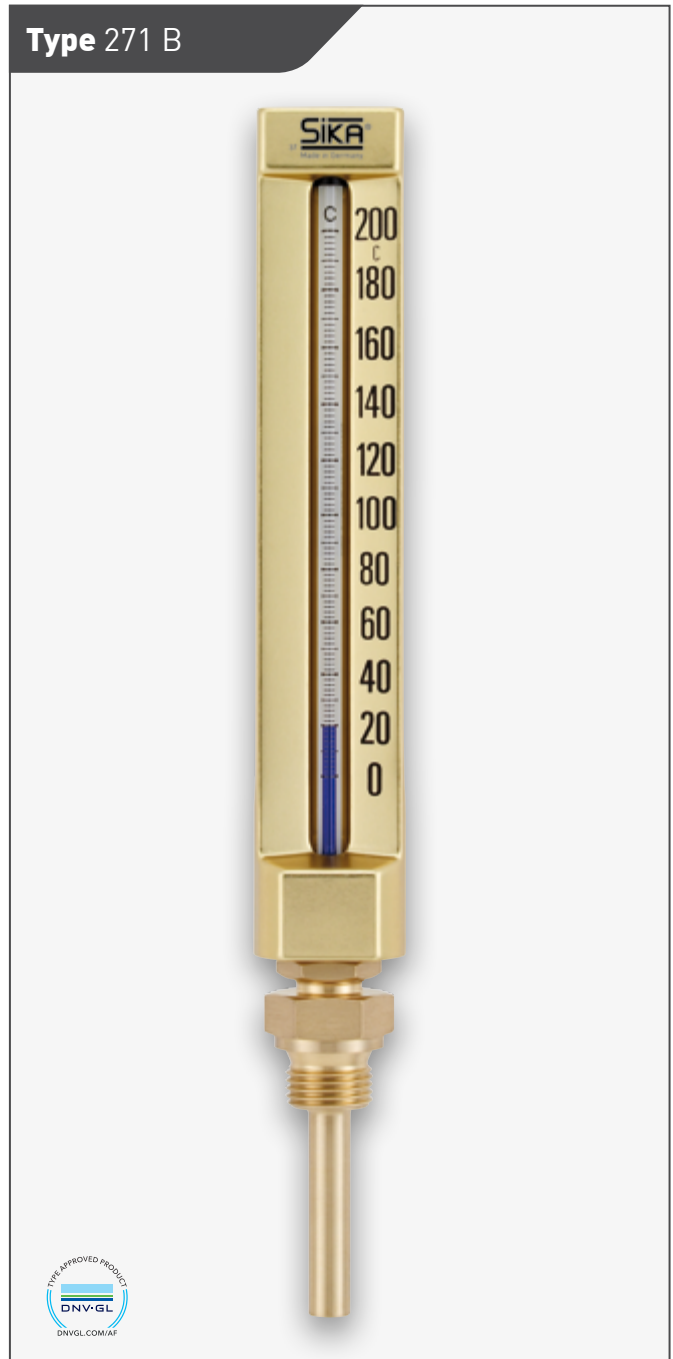
# SIKA thermometers

## SIKA thermometer type 271 B, straight

- Nominal size 200 mm
- Immersion tube Ø 10 mm, brass
- Connection thread: G½, brass
- DIN 16189 B
- DNV GL type approval  
Certificate No. 94 65494 HH
- Original SIKA thermometer, made in Germany

Order code	SIKA	ISSA	IMPA
<b>Display range [°C]</b>		<b>Immersion tube length (L) 63 mm</b>	
-30...50	2712351106321	61.110.10	65 19 01
0...60	2712061106321	61.110.16	65 19 28
0...100	2712101106321	61.110.22	65 19 04
0...120	2712121106321	61.110.28	65 19 31
0...160	2712161106321	61.110.34	65 19 07
0...200	2712201106321		65 19 10
0...250	2712251106321	61.110.40	
0...300	2712301206321	61.110.50	65 20 53
0...600	2717601206322	61.110.80	65 19 22
<b>Display range [°C]</b>		<b>Immersion tube length (L) 100 mm</b>	
-30...50	2712351110021	61.110.11	65 19 02
0...60	2712061110021	61.110.17	65 19 29
0...100	2712101110021	61.110.23	65 19 05
0...120	2712121110021	61.110.29	65 19 32
0...160	2712161110021	61.100.83	65 19 08
0...200	2712201110021		65 19 11
0...250	2712251110021	61.100.41	
0...300	2712301210021	61.110.51	65 19 54
0...600	2712601210022	61.110.81	65 19 23
<b>Display range [°C]</b>		<b>Immersion tube length (L) 160 mm</b>	
-30...50	2712351116021	61.110.12	65 19 03
0...60	2712061116021	61.110.18	65 19 30
0...100	2712101116021	61.110.24	65 19 06
0...120	2712121116021	61.110.30	65 19 33
0...160	2712161116021	61.110.36	65 19 09
0...200	2712201116021		65 19 12
0...250	2712251116021	61.100.42	
0...300	2712301216021	61.110.52	65 19 55
0...600	2712601216022	61.110.82	65 19 24

Also available with connection threads:  
G¾, M20 x 1.5, M27 x 2, ½ NPT

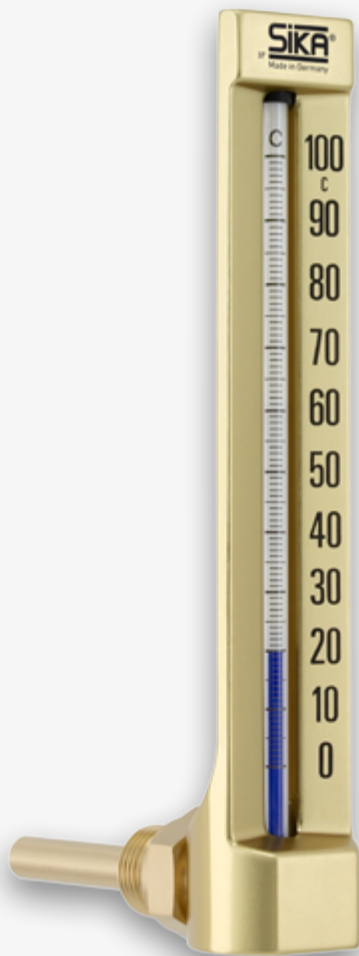


### Legal notice

According to regulation no. 847/2012 of European Union, thermometers with mercury filling are only bound for export outside the EU. Placing them on the market inside the EU after April 10th, 2014 is prohibited. Concerned are industrial thermometers and glass inserts with display ranges 0...300°C and higher, only. In this case, we are recommending the use of our dial or digital thermometers.

## SIKA thermometer type 272 B, angle 90°

### Type 272 B



- Nominal size 200 mm
- Immersion tube Ø 10 mm, brass
- Connection thread: G½, brass
- DIN 16190 B
- DNV GL type approval  
Certificate No. 94 65494 HH
- Original SIKA thermometer, made in Germany

Order code	SIKA	ISSA	IMPA
<b>Display range [°C]</b>		<b>Immersion tube length (L) 63 mm</b>	
-30...50	2722351106321	61.113.05	65 20 01
0...60	2722061106321	61.113.08	65 20 28
0...100	2722101106321	61.113.11	65 20 04
0...120	2722121106321	61.113.14	62 20 31
0...160	2722161106321	61.113.17	65 20 07
0...200	2722201106321		65 20 10
0...250	2722251106321	61.113.20	
0...300	2722301206321	61.113.25	65 20 13
0...600	2722601206322	61.113.40	65 20 22
<b>Display range [°C]</b>		<b>Immersion tube length (L) 100 mm</b>	
-30...50	2722351110021	61.113.06	65 20 02
0...60	2722061110021	61.113.09	62 20 29
0...100	2722101110021	61.113.12	65 20 05
0...120	2722121110021	61.113.15	65 20 32
0...160	2722161110021	61.113.18	65 20 08
0...200	2722201110021		65 20 11
0...250	2722251110021	61.113.21	
0...300	2722301210021	61.113.26	65 20 14
0...600	2722601210022	61.113.41	65 20 23
<b>Display range [°C]</b>		<b>Immersion tube length (L) 160 mm</b>	
-30...50	2722351116021	61.113.07	65 20 03
0...60	2722061116021	61.113.10	65 20 30
0...100	2722101116021	61.113.13	65 20 06
0...120	2722121116021	61.113.16	65 20 33
0...160	2722161116021	61.113.19	65 20 09
0...200	2722201106021		65 20 12
0...250	2722251116021	61.113.22	
0...300	2722301216021	61.113.27	65 20 15
0...600	2722601216022	61.113.42	65 20 24

Also available with connection threads:  
G¾, M20 x 1.5, M27 x 2, ½ NPT



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## SIKA thermometer type 291 B, straight

- Nominal size 150 mm
- Immersion tube Ø 10 mm, brass
- Connection thread: G½, brass
- DIN 16185 B
- DNV GL type approval  
Certificate No. 94 65494 HH
- Original SIKA thermometer, made in Germany

Order code	SIKA	ISSA	IMPA
<b>Display range [°C]</b>	<b>Immersion tube length (L<sub>i</sub>) 63 mm</b>		
-30...50	2912351106321	61.111.10	65 19 41
0...60	2912061106321	61.111.16	65 19 68
0...100	2912101106321	61.111.22	65 19 44
0...120	2912121106321	61.111.28	65 19 71
0...160	2912161106321	61.111.34	65 19 47
0...200	2912201106321		65 19 50
0...250	2912251106321	61.111.40	
0...300	2912301206321	61.111.50	65 19 53
0...600	2912601206322	61.111.80	65 19 62
<b>Display range [°C]</b>	<b>Immersion tube length (L<sub>i</sub>) 100 mm</b>		
-30...50	2912351110021	61.111.11	65 19 42
0...60	2912061110021	61.111.17	65 19 69
0...100	2912101110021	61.111.23	65 19 45
0...120	2912121110021	61.111.29	65 19 72
0...160	2912161110021	61.111.35	65 19 48
0...200	2912201110021		65 19 51
0...250	2912251110021	61.111.41	
0...300	2912301210021	61.111.51	65 19 54
0...600	2912601210022	61.110.81	65 19 63
<b>Display range [°C]</b>	<b>Immersion tube length (L<sub>i</sub>) 160 mm</b>		
-30...50	2912351116021	61.111.12	65 19 43
0...60	2912061116021	61.111.18	65 19 70
0...100	2912101116021	61.111.24	65 19 46
0...120	2912121116021	61.111.30	65 19 73
0...160	2912161116021	61.111.36	65 19 49
0...200	2912201116021		65 19 52
0...250	2912251116021	61.111.42	
0...300	2912301216021	61.111.52	65 19 55
0...600	2912601216022	61.111.82	65 19 64

Also available with connection threads:  
G¾, M20 x 1.5, M27 x 2, ½ NPT

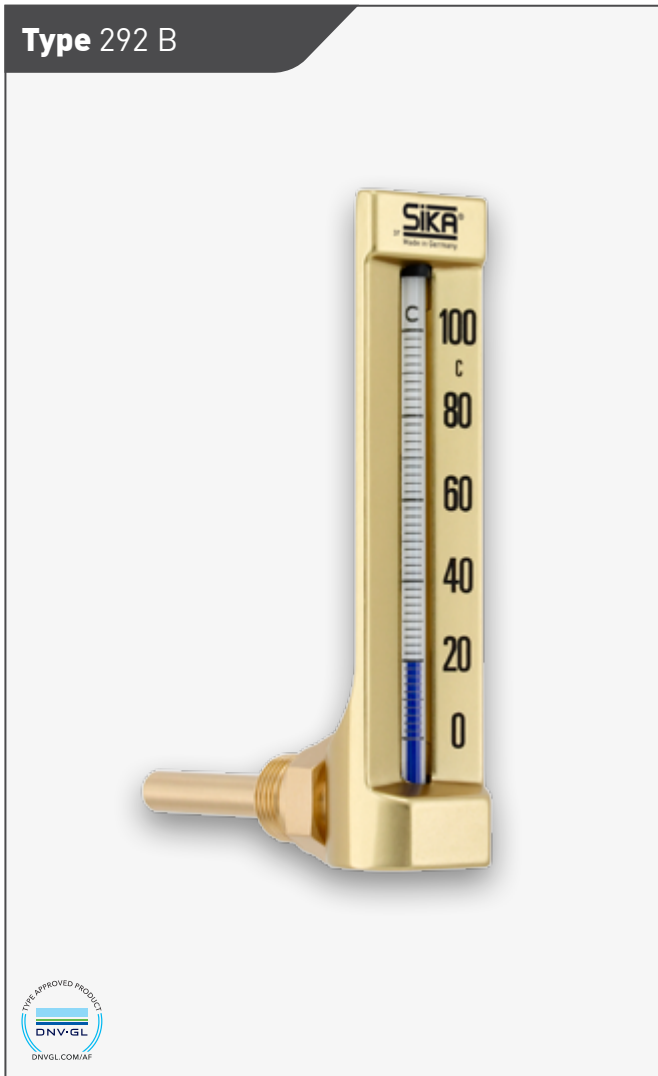
### Type 291 B



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## SIKA thermometer type 292 B, angle 90°



- Nominal size 150 mm
- Immersion tube Ø 10 mm, brass
- Connection thread: G½, brass
- DIN 16186 B
- DNV GL type approval  
Certificate No. 94 65494 HH
- Original SIKA thermometer, made in Germany

Order code	SIKA	ISSA	IMPA
<b>Display range [°C]</b>	<b>Immersion tube length (L<sub>i</sub>) 63 mm</b>		
-30...50	2922351106321	61.114.08	65 20 41
0...60	2922061106321	61.114.13	65 20 68
0...100	2922101106321	61.114.18	65 20 44
0...120	2922121106321	61.114.23	65 20 71
0...160	2922161106321	61.114.28	65 20 47
0...200	2922201106321		65 20 50
0...250	2922251106321	61.114.33	
0...300	2922301206321	61.114.38	65 20 53
0...600	2922 601206322	61.114.43	65 20 62
<b>Display range [°C]</b>	<b>Immersion tube length (L<sub>i</sub>) 100 mm</b>		
-30...50	2922351110021	61.114.09	65 20 42
0...60	2922061110021	61.114.14	65 20 69
0...100	2922101110021	61.114.19	65 20 45
0...120	2922121110021	61.114.24	65 20 72
0...160	2922161110021	61.114.29	65 20 48
0...200	2922201110021		65 20 51
0...250	2922251110021	61.114.34	
0...300	2922301210021	61.114.39	65 20 54
0...600	2922601210022	61 114.44	65 20 63
<b>Display range [°C]</b>	<b>Immersion tube length (L<sub>i</sub>) 160 mm</b>		
-30...50	2922351116021	61.114.10	65 20 43
0...60	2922061116021	61.114.15	65 20 70
0...100	2922101116021	61.114.20	65 20 46
0...120	2922121116021	61.114.25	65 20 73
0...160	2922161116021	61.114.30	65 20 49
0...200	2922201116021		65 20 52
0...250	2922251116021	61.114.35	
0...300	2922301216021	61.114.40	65 20 55
0...600	2922601216022	61.114.45	65 20 64

Also available with connection threads:  
G¾, M20 x 1.5, M27 x 2, ½ NPT

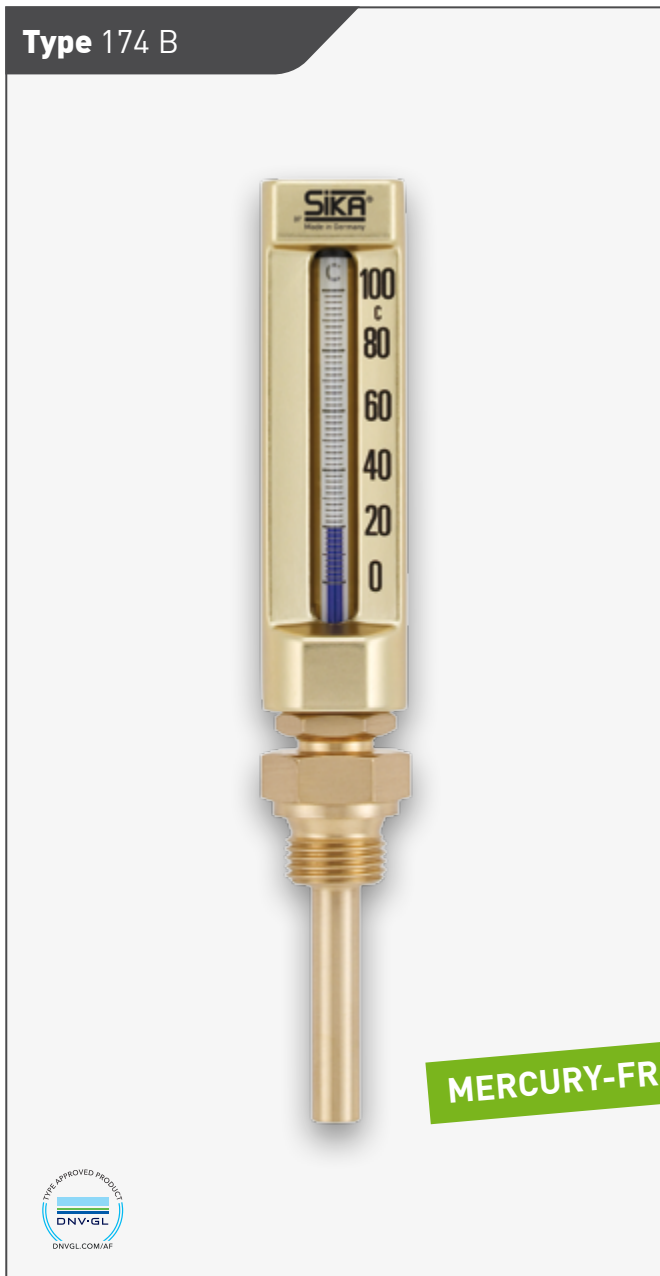


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## SIKA thermometer type 174 B, straight

- Nominal size 110 mm
- Immersion tube Ø 10 mm, brass
- Connection thread: G½, brass
- DIN 16181 B
- DNV GL type approval  
Certificate No. 94 65494 HH
- Original SIKA thermometer, made in Germany



Order code	SIKA	ISSA	IMPA
<b>Display range [°C]</b>	<b>Immersion tube length (L<sub>i</sub>) 30 mm</b>		
-30...50	1742351103021		
0...60	1742061103021		
0...100	1742101103021		65 19 81
0...120	1742121103021		
0...160	1742161103021		
0...200	1742201103021		65 19 86
<b>Display range [°C]</b>	<b>Immersion tube length (L<sub>i</sub>) 40 mm</b>		
-30...50	1742351104021		
0...60	1742061104021		
0...100	1742101104021		65 19 82
0...120	1742121104021		
0...160	1742161104021		
0...200	1742201104021		65 19 87
<b>Display range [°C]</b>	<b>Immersion tube length (L<sub>i</sub>) 63 mm</b>		
-30...50	1742351106321	61.112.07	
0...60	1742061106321	61.112.13	
0...100	1742101106321	61.112.19	65 19 83
0...120	1742121106321	61.112.25	
0...160	1742161106321	61.112.31	
0...200	1742201106321		65 19 88
<b>Display range [°C]</b>	<b>Immersion tube length (L<sub>i</sub>) 100 mm</b>		
-30...50	1742351110021	61.112.08	
0...60	1742061110021	61.112.14	
0...100	1742101110021	61.112.20	65 19 84
0...120	1742121110021	61.112.26	
0...160	1742161110021	61.112.32	
0...200	1742201110021		65 19 89
<b>Display range [°C]</b>	<b>Immersion tube length (L<sub>i</sub>) 160 mm</b>		
-30...50	1742351116021	61.112.09	
0...60	1742061116021	61.112.15	
0...100	1742101116021	61.112.21	65 19 85
0...120	1742121116021	61.112.27	
0...160	1742161116021	61.112.33	
0...200	1742201116021		65 19 90

Also available with connection threads:  
G¾, M20 x 1.5, M27 x 2, ½ NPT

## SIKA thermometer type 175 B, angle 90°

Order code	SIKA	ISSA	IMPA
<b>Display range [°C]</b>	<b>Immersion tube length (L) 30 mm</b>		
-30...50	1752351103021		
0...60	1752061103021		
0...100	1752101103021		65 20 81
0...120	1752121103021		
0...160	1752161103021		
0...200	1752201103021		65 20 86
<b>Display range [°C]</b>	<b>Immersion tube length (L) 40 mm</b>		
-30...50	1752351104021	61.115.06	
0...60	1752061104021	61.115.11	
0...100	1752101104021	61.115.16	65 20 82
0...120	1752121104021	61.115.21	
0...160	1752161104021	61.115.26	
0...200	1752201104021		65 20 87
<b>Display range [°C]</b>	<b>Immersion tube length (L) 63 mm</b>		
-30...50	1752351106321	61.115.08	
0...60	1752061106321	61.115.13	
0...100	1752101106321	61.115.18	65 20 83
0...120	1752121106321	61.115.23	
0...160	1752161106321	61.115.28	
0...200	1752201106321		65 20 88
<b>Display range [°C]</b>	<b>Immersion tube length (L) 100 mm</b>		
-30...50	1752351110021	61.115.09	
0...60	1752061110021	61.115.14	
0...100	1752101110021	61.115.19	65 20 84
0...120	1752121110021	61.115.24	
0...160	1752161110021	61.115.29	
0...200	1752201110021		65 20 89
<b>Display range [°C]</b>	<b>Immersion tube length (L) 160 mm</b>		
-30...50	1752351116021	61.115.10	
0...60	1752061116021	61.115.15	
0...100	1752101116021	61.115.20	65 20 85
0...120	1752121116021	61.115.25	
0...160	1752161116021	61.115.30	
0...200	1752201116021		65 20 90

Also available with connection threads:  
G¾, M20 x 1.5, M27 x 2, ½ NPT

- Nominal size 110 mm
- Immersion tube Ø 10 mm, brass
- Connection thread: G½, brass
- DIN 16182 B
- DNV GL type approval  
Certificate No. 94 65494 HH
- Original SIKA thermometer, made in Germany

### Type 175 B



**MERCURY-FREE**

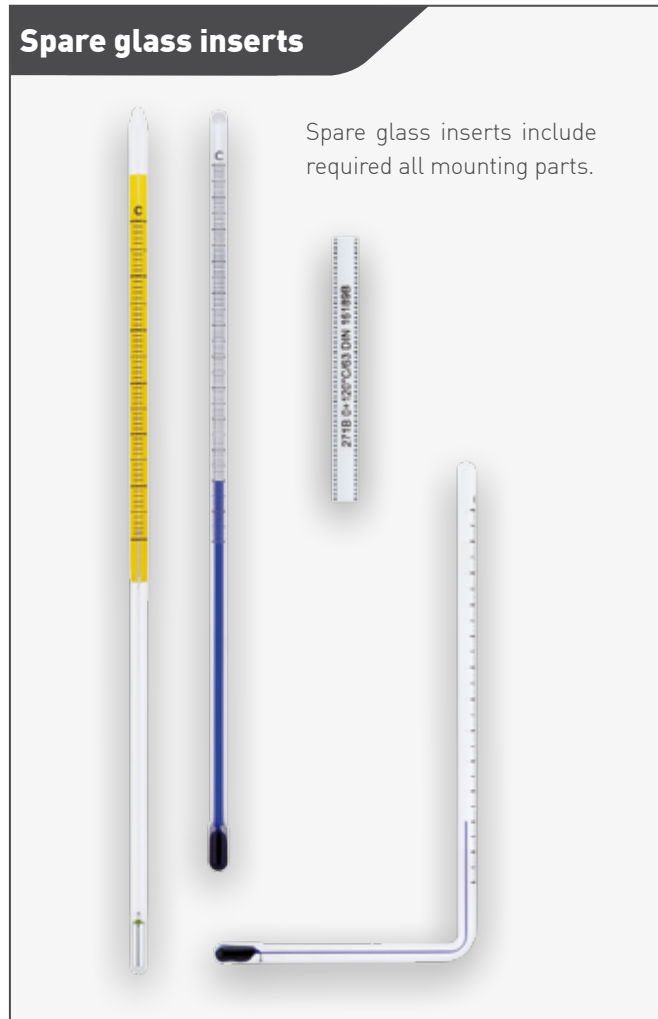




# SIKA glass inserts for replacement

## SIKA glass inserts for thermometers

Order example	174	2	35	1	1	030
<b>Thermometer type</b>						
Straight	174					
	291					
	271					
Angle 90°	175					
	292					
	272					
<b>Immersion tube</b>						
Type B		2				
<b>Display ranges</b>						
-30...50 °C			35			
0...60 °C			06			
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...600 °C			60			
<b>Scale</b>						
Celsius (°C)				1		
Celsius + Fahrenheit (°C + °F)				2		
<b>Filling</b>						
Standard fluid for ranges up to 250 °C	Fü				1	
Mercury for ranges above 250 °C	HG				2	
<b>Immersion tube length</b>						
Immersion tube length l1 in mm						030
(according to complete thermometers)						040
for types B with fixed male connection thread						063
						100
						160
						250



*Please notice:*

*The required order specification is printed on the backside of the insert*

### Quality by Tradition - Made in Germany

Since 1901 we at SIKA Dr. Siebert and Kühn have been producing precision measuring and control instruments. Mechanical parts as well as glass inserts of our standard types are produced in automated manufacturing processes. However, the glass inserts of special versions, e. g. high temperature versions are still manufactured by our glassblowers in traditional handcraft. Thanks to our long year experience and proven manufacturing processes in Germany, we are in the position to guarantee best quality. SIKA thermometers meet highest demands in precision as well as in mechanical stability. Original SIKA thermometers simply last longer than most others.



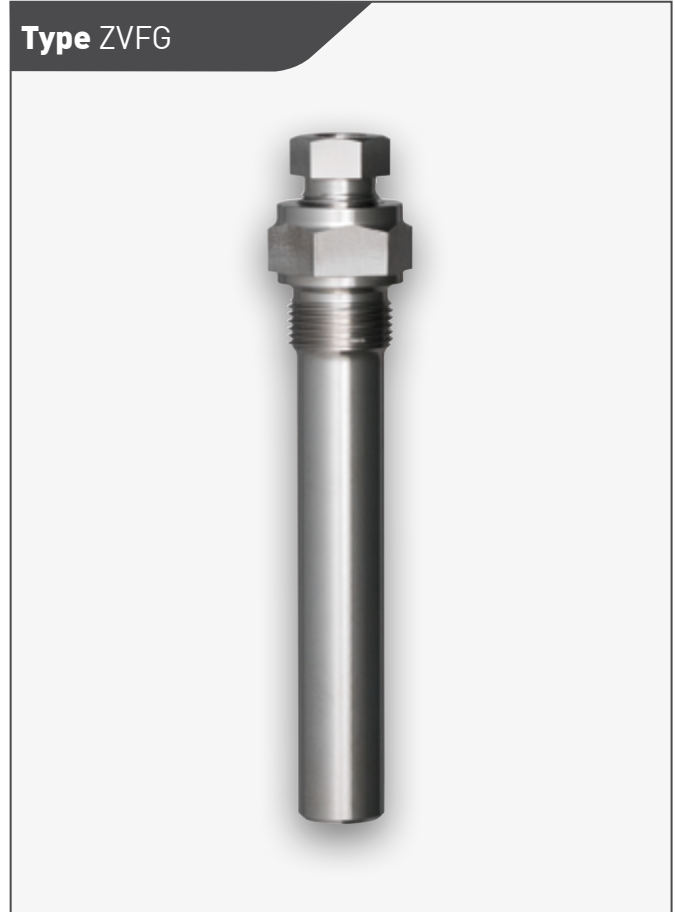
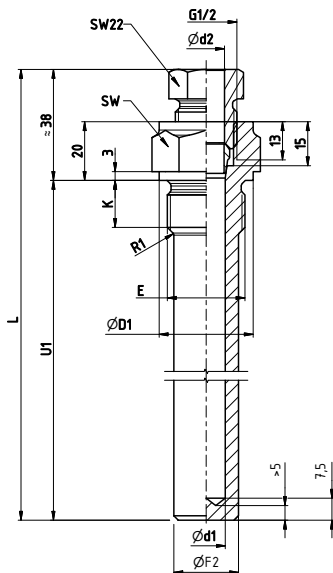


# Diesel engine protection tubes

## As an accessory to the diesel engine thermometer

Protection tubes are applied to protect thermometer immersion tubes against difficult chemical and / or mechanical process conditions. Furthermore it is far easier to dismount a thermometer e.g. for repair or other reasons when a protection tube remains at the measuring point.

SIKA ZVFG protection tubes with integrated compression fitting have been developed as a solution for Diesel engine dial thermometers. They are machined from solid material; their integrated compression fitting minimises the risk of breakage during operation.



Order example	ZVFG	100	2	3	4	M
Order code starting with	ZVFG					
<b>Protection tube length (U1)</b>						
100 mm		100				
135 mm		135				
160 mm		160				
200 mm		200				
250 mm		250				
300 mm		300				
<b>Connection thread</b>						
G1/2			2			
G3/4			3			
<b>Material</b>						
Stainless steel 1.4571				3		
<b>Thermometer immersion tube</b>						
Ø 12 mm					4	
Ø 13 mm					6	
<b>Male thread</b>						M

Please ask for customised specifications

# Diesel engine dial thermometers

## Local reading dial thermometers

This range of instruments includes special precision dial thermometers optimised for marine engines, based on the nitrogen gas expansion principle.

### Typical applications

- Cooling water
- Turbo charged air
- Lubricating oil
- Exhaust gas

### Diesel engine thermometers – Quality lasts longer

A problem to all Diesel engines is vibration, which reduces the life time of mechanical thermometers. SIKA has overcome this problem with their Diesel engine thermometer. This thermometer has a special mechanical sensor design, optimised for the use at marine engines. Furthermore, the case contains a shock absorbing liquid of high viscosity, which protects the internal meter movement against heavy vibration and at the same time lubricates internal parts and avoids corrosion. SIKA Diesel Engine Thermometers therefore last longer than many others.

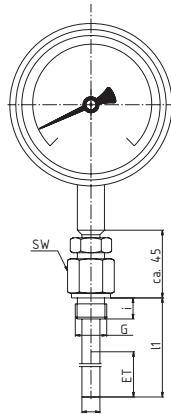
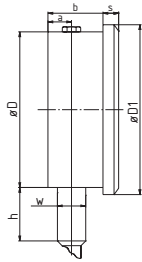


Technical data	
Display range*	0...100 °C 0...120 °C 0...160 °C 0...250 °C 50...650 °C
Nominal size, material	63, 80 or 100 mm, stainless steel 1.4301
Dial	White, black markings (up to 250 °C) Silver coloured, black markings (above 250 °C)
System	Nitrogen filled system
Immersion tube	Stainless steel
Standard immersion tube lengths (L <sub>1</sub> )	100, 135, 160, 200, 250, 300, 400 mm
Thread connection	Adjustable compression fitting
Thread size	G $\frac{1}{2}$ , G $\frac{3}{4}$
Accuracy (EN 13190)	Class 1.0
Approval	 DNV GL type approval, Certificate No. 12 02698 HH

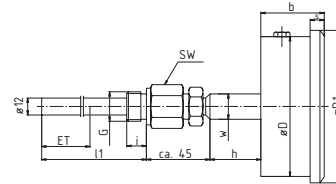
\* Dual scale °C and °F available on request

## Dimensions

Bottom connection  
Type 1312 / type 8312 / type 6312



Central back connection  
Type 1372 / type 8372 / type 6372



NS	a	b	D	D1	h	s	w
<b>Type 6312</b>							
63	12	39	62	67	60	8	12
<b>Type 6372</b>							
63	12	39	62	67	34	8	18
<b>Type 8312, type 8372</b>							
80	15	42	79	86	34	8	18
<b>Type 1312, type 1372</b>							
100	15	43	99	106	34	10	18

## Order code

Order example		Z	63	12	A	10	1	100	0	0	3
<b>Nominal size</b>											
63 mm		63									
80 mm		83									
100 mm		13									
<b>Type</b>											
Bottom connection			12								
Central back connection			72								
<b>Connection type</b>											
Connection type A, plain immersion tube					A						
Connection type Ak, adjustable compression fitting					M						
<b>Scale range</b>											
0...100 °C						10					
0...120 °C						12					
0...160 °C						16					
0...250 °C						25					
50...650 °C						56					
<b>Temperature unit</b>											
°C*							1				
<b>Immersion tube length l<sub>1</sub> and L</b>											
<b>Immersion tube length l<sub>1</sub></b>	<b>Immersion tube length L</b>										
100 mm	145 mm							100			
135 mm	180 mm							135			
160 mm	205 mm							160			
200 mm	245 mm							200			
250 mm	295 mm							250			
300 mm	345 mm							300			
400 mm	445 mm							400			
<b>Connection thread</b>											
Without - plain immersion tube, type A									0		
G½									2		
G¾									3		
½ NPT									B		
¾ NPT									C		
M20 x 1,5									7		
<b>Connection thread material</b>											
Without - plain immersion tube, type A										0	
Steel										2	
<b>Immersion tube diameter</b>											
10 mm (for NS 63 and NS 80 mm only)											3
12 mm											4
13 mm											6

\* Double scale °C and °F available on request.

Please use our order numbers for standard types or provide full technical specification in case of special non-standard thermometers

## Remote reading dial thermometers

SIKA remote reading Diesel engine thermometers are based on the same system as our well-known direct mount thermometers. These instruments are available adapted to the customers present needs with any of the optional accessories: wall bracket, rear flange or U-clamp fixing for panel mounting.


### Typical applications

- Cooling water
- Turbo charged air
- Lubricating oil
- Exhaust gas

### Remote reading diesel engine thermometer

The remote reading versions are of the same mechanical sensor design as the local reading thermometers. The case is filled with a shock absorbing liquid of high viscosity. Furthermore, the capillary line is protected by a stable stainless steel spiral protection. SIKA remote Diesel Engine Thermometers – vibration optimised quality for rough environments, ideal for the use at marine Diesel engines.

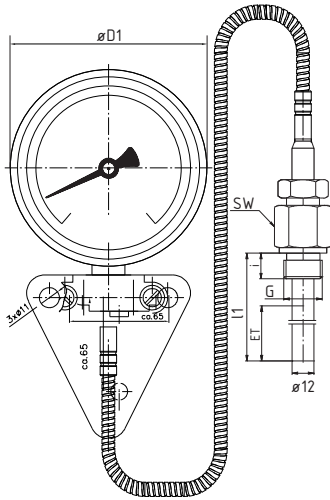


Technical data	
<b>Display range*</b>	0...100 °C 0...120 °C 0...160 °C 0...250 °C 50...650 °C
<b>Nominal size, material</b>	80 or 100 mm, stainless steel 1.4301
<b>Dial</b>	Silver coloured, black markings
<b>System</b>	Nitrogen filled system
<b>Immersion tube</b>	Stainless steel
<b>Standard immersion tube length (l<sub>1</sub>)</b>	100, 135, 160, 200, 250, 300, 400 mm
<b>Thread connection</b>	Adjustable compression fitting
<b>Thread size</b>	G½, G¾
<b>Accuracy (EN 13190)</b>	Class 1.0, Limits of error acc. DIN EN 13190
<b>Approval</b>	 DNV GL type approval, Certificate No. 12 027-98 HH

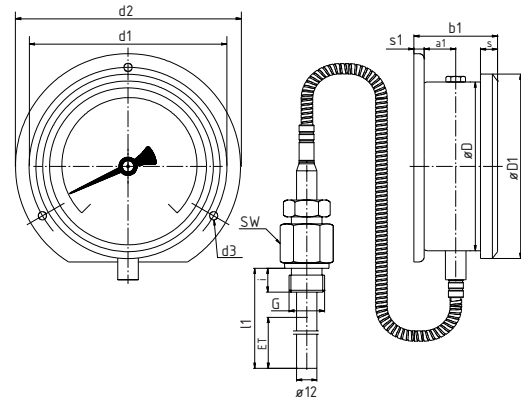
\* Dual scale °C and °F available on request

# Dimensions

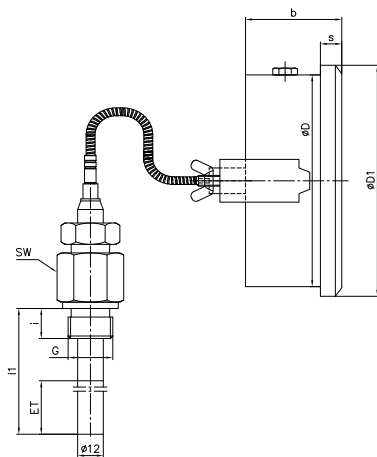
Type 311  
with wall bracket



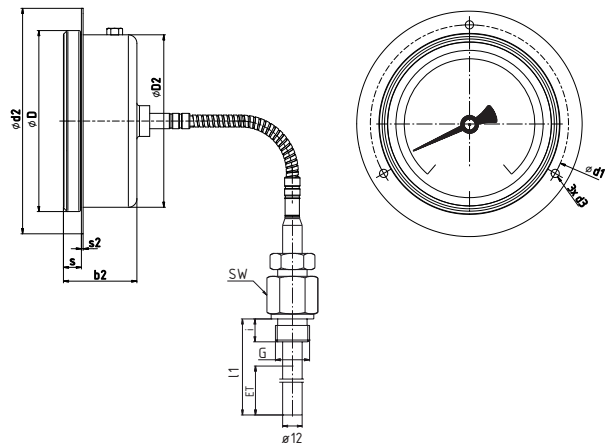
Type 321  
with rear mounting flange



Type 331  
U-clamp for panel mounting



Type 332  
with front mounting flange



NS	a1	b1	b2	D	D1	d1	d2	d3	s	s1	s2
80	18	48	42	79	86	95	110	4,8	8	5	1
100	18.5	49	43	99	106	116	132	4,8	10	6	1

## Order code

Order example		Z	311	B2	10	100	1	0	2	1	C
<b>Type</b>											
311 WH		311									
321 TA		321									
331 KL		331									
332 TE		332									
<b>Nominal size</b>											
80 mm				B2							
100 mm				C2							
<b>Scale range</b>											
0...100 °C					10						
0...120 °C					12						
0...160 °C					16						
0...250 °C					25						
50...650 °C					56						
<b>Immersion tube length l<sub>1</sub> and L</b>											
<b>Immersion tube length l<sub>1</sub></b>	<b>Immersion tube length L</b>										
100 mm	145 mm					100					
135 mm	180 mm					135					
160 mm	205 mm					160					
200 mm	245 mm					200					
250 mm	295 mm					250					
300 mm	345 mm					300					
400 mm	445 mm					400					
<b>Connection type</b>											
Connection type A, plain immersion tube							1				
Connection type Ak, adjustable compression fitting							9				
<b>Connection thread</b>											
Without - plain immersion tube								0			
G½								2			
G¾								3			
½ NPT								B			
¾ NPT								C			
M20 x 1.5								7			
<b>Immersion tube diameter</b>											
Ø 12 mm									2		
<b>Capillary length</b>											
1 m										1	
3 m										3	
5 m										5	
Length in meter										—	
<b>Capillary material, protection</b>											
Stainless steel, stainless steel spiral protection											C

\* Double scale °C and °F available on request.

Please use our order numbers for standard types or provide full technical specification in case of special non-standard thermometers



# Low temperature dial thermometers

## Local reading - Type 301 - 302 for measuring ranges -200...100 °C

This product group was developed to monitor temperature critical cooling applications. By using high quality materials and a proven as well as safe measuring system with nitrogen filling, our low temperature thermometers are suitable for the use on e.g. liquid gas transport ships. These measuring instruments are adapted to the specific needs of the industry and are available in several versions.

### Typical Applications

- Gas transport for LNG, CNG, LPG, etc.
- Cooling ships and other cooling vehicles

Similar to our well-known diesel engine thermometers, which were specially designed for high operating temperatures on large and marine diesel engines, our low temperature dial thermometers have a mechanical design which was adapted to the harsh operating conditions in cooling applications.

- Very good readability of the shown measured value
- Protection of the measuring system by a vibration absorbing case filling
- Stable, durable housing design made of stainless steel
- Extensive product range with different measuring ranges and housing sizes
- Easy installation by variable compression fitting in numerous thread sizes



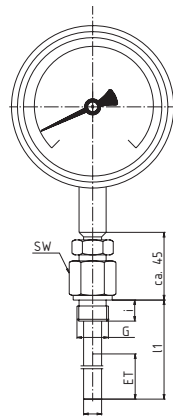
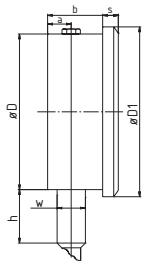
Technical data	
<b>Display range*</b>	-200...100 °C -150...100 °C -50...10 °C -100...50 °C
<b>Nominal size, material</b>	63, 80 or 100 mm, stainless steel 1.4301
<b>Dial</b>	Silver coloured, black markings
<b>System</b>	Nitrogen filled system
<b>Immersion tube</b>	Stainless steel
<b>Standard immersion tube lengths (l<sub>1</sub>)</b>	100, 135, 160, 200, 250, 300, 400 mm
<b>Thread connection</b>	Adjustable compression fitting
<b>Thread size</b>	G½, G¾
<b>Accuracy (EN 13190)</b>	Class 1.0

\* Double scale °C and °F available on request

# Dimensions

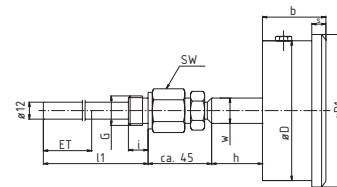
## Bottom connection

Type 301



## Central back connection

Type 302



### Dimensions [mm]

NS	a	b	D	D1	h	s	w
<b>Type 301</b>							
63	12	39	62	67	60	8	12
<b>Type 302</b>							
63	12	39	62	67	34	8	18
<b>Type 301, 302</b>							
80	15	42	79	86	34	8	18
<b>Type 301, 302</b>							
100	15	43	99	106	34	10	18

## Order code

Order example		Z	301	A2	F2	100	0	0	0	3
<b>Type</b>										
Bottom connection			301							
Central back connection			302							
<b>Nominal size</b>										
63 mm				A2						
80 mm				B2						
100 mm				C2						
<b>Scale range</b>										
-200...100 °C					F2					
-200...50 °C					A2					
-150...100 °C					E4					
-50...100 °C					F1					
-100...50 °C					95					
<b>Immersion tube length <math>l_1</math></b>	<b>Nominal length <math>L = l_1 + 45</math> mm</b>									
100 mm	145 mm					100				
135 mm	180 mm					135				
160 mm	205 mm					160				
200 mm	245 mm					200				
250 mm	295 mm					250				
300 mm	345 mm					300				
400 mm	445 mm					400				
<b>Connection type</b>										
Connection type A, plain immersion tube							0			
Connection type Ak, adjustable compression fitting							9			
<b>Connection thread</b>										
Without - plain immersion tube, type A								0		
G $\frac{1}{2}$								2		
G $\frac{3}{4}$								3		
$\frac{1}{2}$ NPT								B		
$\frac{3}{4}$ NPT								C		
M20 x 1.5								7		
<b>Connection thread material</b>										
Without - plain immersion tube, type A									0	
Steel									2	
<b>Immersion tube diameter</b>										
10 mm (for NS 63 and NS 80 mm only)										3
12 mm										4
13 mm										6

\* Double scale °C and °F available on request.

Please use our order numbers for standard types or provide full technical specification in case of special non-standard thermometers

## Remote reading - Type 310 - 340 for measuring ranges -200...100 °C

This product group was developed to monitor temperature critical cooling applications. By using high quality materials and a proven as well as safe measuring system with nitrogen filling, our low temperature thermometers are suitable for the use in various cooling applications. These measuring instruments are adapted to the specific needs of the industry and are available in several versions.

### Typical Applications

- Gas transport for LNG, CNG, LPG, etc.
- Cooling ships and other cooling vehicles

Our remote reading low temperature dial thermometers were specifically developed for measuring points which are not directly accessible. The capillary of these measuring devices is protected by a stainless steel spiral tube and therefore always adapted to the demanding operating conditions on the high seas.

- Very good readability of the shown measured value
- Protection of the measuring system by a vibration absorbing case filling
- Stable, durable housing design made of stainless steel
- Extensive product range with different measuring ranges and housing sizes
- Easy installation by variable compression fitting in numerous thread sizes



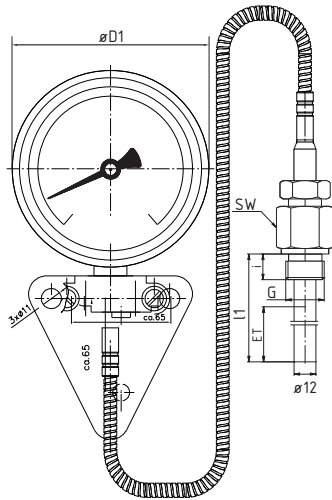
Technical data	
<b>Display range*</b>	-200...100 °C -150...100 °C -50...10 °C -100...50 °C
<b>Nominal size, material</b>	80 or 100 mm, stainless steel 1.4301
<b>Dial</b>	Silver coloured, black markings
<b>System</b>	Nitrogen filled system
<b>Immersion tube</b>	Stainless steel
<b>Standard immersion tube length (l<sub>1</sub>)</b>	100, 135, 160, 200, 250, 300, 400 mm
<b>Thread connection</b>	Adjustable compression fitting
<b>Thread size</b>	G $\frac{1}{2}$ , G $\frac{3}{4}$
<b>Accuracy (EN 13190)</b>	Class 1.0, Limits of error acc. DIN EN 13190

\* Double scale °C and °F available on request

# Dimensions

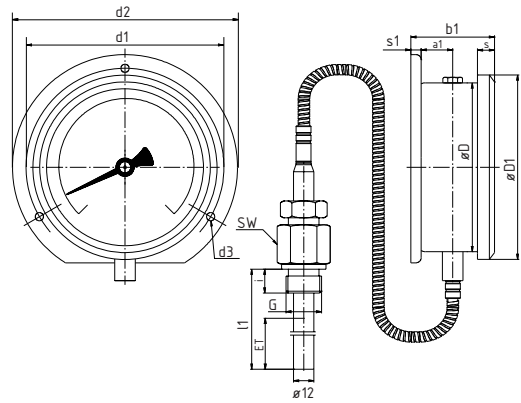
## Type 310 WH

with wall bracket



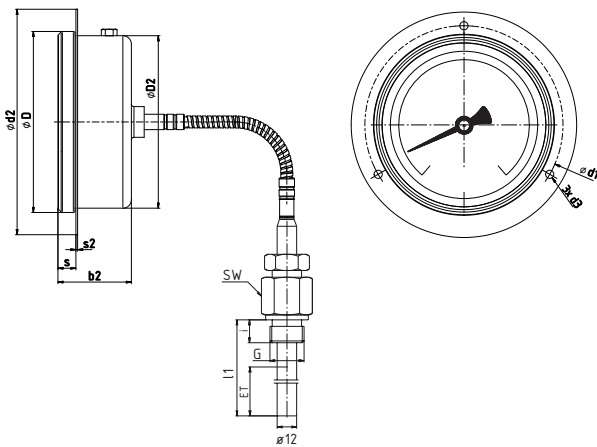
## Type 320 TA

with rear mounting flange



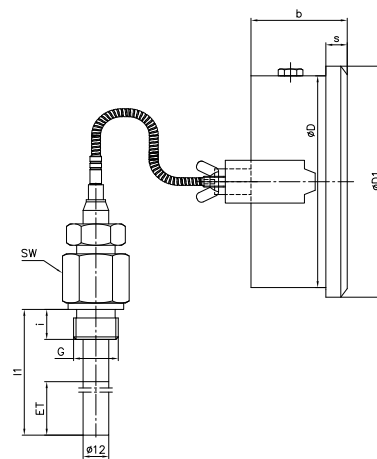
## Type 330 TE

with front mounting flange



## Type 340 KL

U-clamp for panel mounting



### Dimensions [mm]

NS	a1	b1	b2	D	D1	d1	d2	d3	s	s1	s2
80	18	48	42	79	86	95	110	4,8	8	5	1
100	18.5	49	43	99	106	116	132	4,8	10	6	1

## Order code

Order example		Z	310	B2	10	100	1	0	2	1	C
<b>Type</b>											
With wall bracket		310									
With rear mounting flange		320									
With front mounting flange		330									
With U bracket		340									
<b>Nominal size</b>											
80 mm				B2							
100 mm				C2							
<b>Scale range</b>											
-200...100 °C					F2						
-200...50 °C					A2						
-150...100 °C					E4						
-50...10 °C					F1						
-100...50 °C					95						
<b>Immersion tube length <math>l_1</math></b>	<b>Nominal length <math>L = l_1 + 45</math> mm</b>										
100 mm	145 mm					100					
135 mm	180 mm					135					
160 mm	205 mm					160					
200 mm	245 mm					200					
250 mm	295 mm					250					
300 mm	345 mm					300					
400 mm	445 mm					400					
<b>Connection type</b>											
Connection type A, plain immersion tube							1				
Connection type Ak, adjustable compression fitting							9				
<b>Connection thread</b>											
Without - plain immersion tube								0			
G $\frac{1}{2}$								2			
G $\frac{3}{4}$								3			
$\frac{1}{2}$ NPT								B			
$\frac{3}{4}$ NPT								C			
M20 x 1.5								7			
<b>Immersion tube diameter</b>											
Ø 12 mm									2		
<b>Capillary length</b>											
1 m										1	
3 m										3	
5 m										5	
Length in meter										-	
<b>Capillary material, protection</b>											
Stainless steel, stainless steel spiral protection											C

\* Double scale °C and °F available on request.

Please use our order numbers for standard types or provide full technical specification in case of special non-standard thermometers

# KombiTemp® dial thermometers

## Diesel engine dial thermometer with integrated temperature sensor

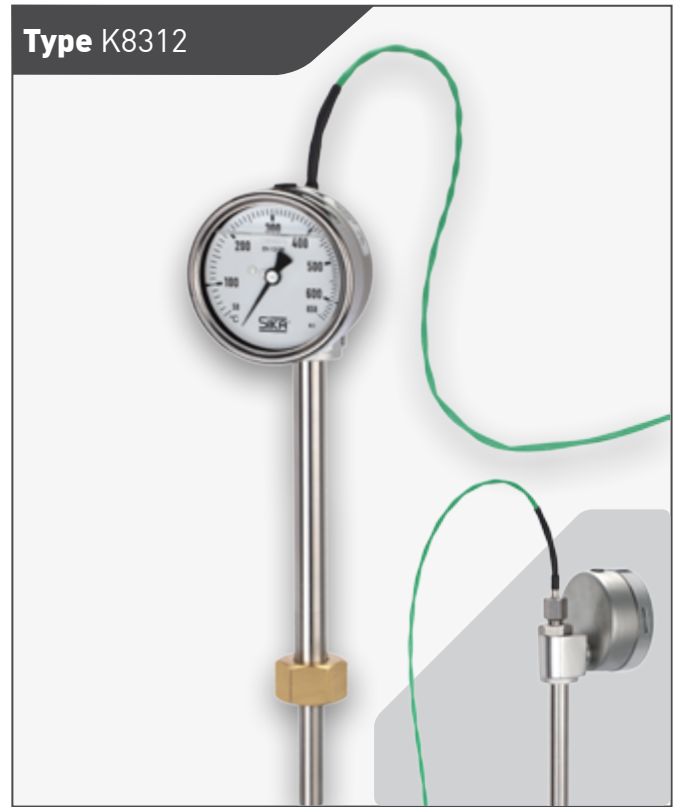
KombiTemp K8312 dial thermometers are the ideal solution for combined temperature measurement of exhaust gas on large diesel engines.

The dial thermometer displays the temperature locally whereas the integrated sensor provides the basis for the corresponding electrical signal to be transmitted to the engine control room. Measuring in the same measuring point saves cost and ensures matching temperature values both at the local display as well as in the vessel's electronic system.

SIKA offers two different versions for common diesel engine types: version 1 for 4-stroke engines and version two for 2-stroke engines.

### Performance features

- Two in one measuring point temperature measurement
- Matching indicator values of dial thermometer and temperature sensor
- With thermocouple type K
- Suitable solid material protection tube available

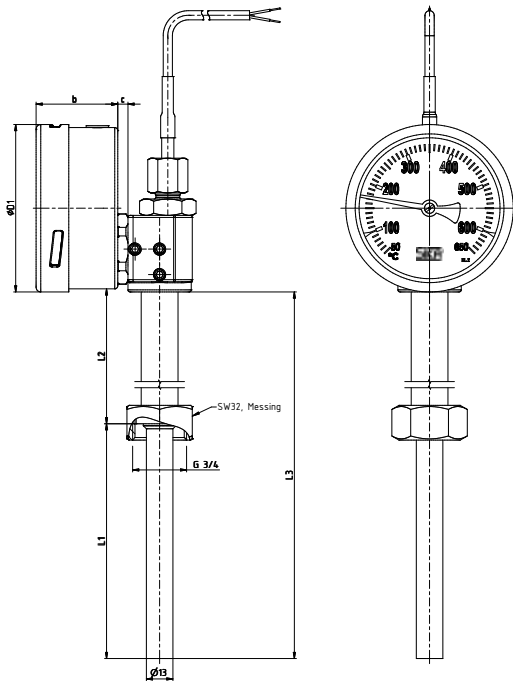


Technical data	
Case	Bayonet ring case, st. steel 1.4301
Nominal size	80 mm
Case filling	Silicone oil
Dial	White coloured, black markings
Display range	50...650 °C
System/accuracy	Gas-filled dial thermometer acc. 1,0, DIN EN 13190, Thermocouple type K (NiCr-Ni), class 2.0
Electrical connection	Cable output with 9 m cable length (version 1) 2 pole MIL connector, without cable (version 2)
Degree of protection	Dial thermometer IP65 Electrical sensor IP56
Connection position	Bottom connection
Immersion tube length/material	l1=115 x Ø 13 mm (version 1), st. steel 1.4571 l1=220 x Ø 13 mm (version 2), st. steel 1.4571
Connection thread/material	Union Nut, G ¾, brass

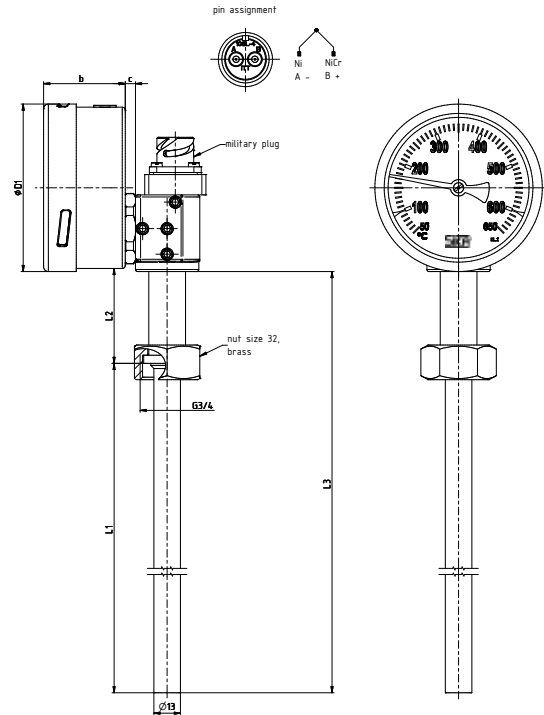


## Dimensions and order code

Type K8312 - version 1



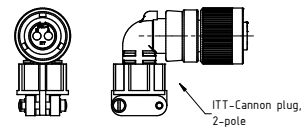
Type K8312 - version 2



Dimensions [mm]	b	c	$\varnothing D_1$	$L_1$	$L_2$	$L_3$
Version 1	40	7.5	82	115	165	274
Version 2	40	7.5	82	220	51.5	265

### Order code

KombiTemp K8312 - version 1	K8312V5610000001
KombiTemp K8312 - version 2	K8312V5610000002
90° angle military plug	XMT0004



90° angle military plug

# Bimetal dial thermometers

## Local reading dial thermometers

This range of dial thermometers is a selection of commonly used thermometers for cooling water, lubricating oil, bearings and other low temperature measurement applications on board of marine vessels. In direct comparison to our diesel engine thermometers these thermometers are proven basic quality thermometers working on the bimetal coil principle. Due to their swivel nut connection they can easily be installed and aligned in measuring points with existing protection tubes.

### Typical applications

- Cooling water
- Turbo charged air
- Lubricating oil

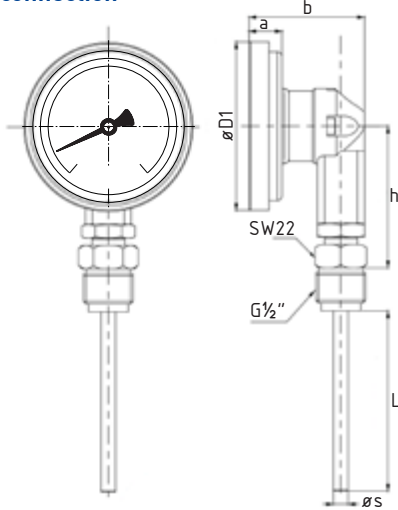


*Thermometers with swivel nut connection are not recommended for direct installation without protection tube in liquids or gases as this connection does not automatically seal. In case of installation without protection tube we refer to our diesel engine thermometers with adjustable compression fitting.*

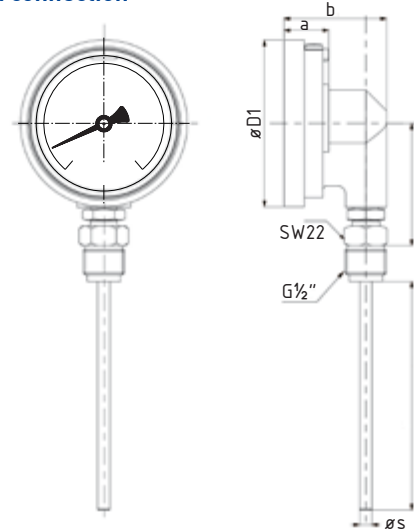
Technical data	
Display range	0...120 °C 0...200 °C
Nominal size, material	70 or 85 mm, stainless steel
Dial	White coloured, black markings
System	Bimetal coil
Immersion tube	Stainless steel
Immersion tube lengths (L)	50, 80, 140 mm
Connection	Rotatable male thread (to be used in protection tubes)
Thread size	G½
Accuracy	± 2% FS

## Dimensions and order code

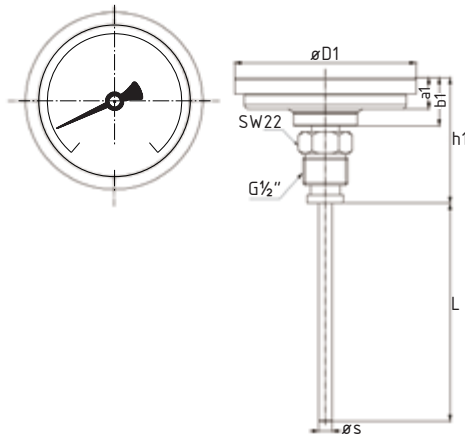
**Type Z7612**  
Bottom connection



**Type Z8612**  
Bottom connection



**Type Z7672 and Z8672**  
Central back connection



**Dimensions [mm]**

NS	a	a1	b	b1	øD1	h	h1	ø <sub>s</sub>
70	14	15	49	23	72	60	59	6.4
85	23	15	52	23	85	63	59	6.4

Order code	Z76	12	S	12	1	050	2	3	1
<b>Model type (nominal size)</b>	70 mm	Z76							
	85 mm	Z86							
<b>Case configuration</b>	Bottom connection	12							
	Central back connection	72							
<b>Connection thread type</b>	Rotatable male thread		S						
<b>Display range</b>	0...120 °C			12					
	0...200 °C			20					
<b>Temperature unit</b>	°C				1				
<b>Immersion tube length (L)</b>	50 mm					050			
	80 mm					080			
	140 mm					140			
<b>Connection thread</b>	G½						2		
<b>Connection thread material</b>	Stainless steel							3	
<b>Immersion tube diameter</b>	6.4 mm								1

# Pressure gauges

## SIKA pressure gauges, type MRE-M and MRE-g

SIKA Pressure gauges are Bourdon type quality gauges, manufactured according to EN 837-1. They are available in three different case sizes, as direct mount versions, with optional mounting flange or as a U-clamp panel mounting version. SIKA offers different measuring ranges starting from -0.6 up to 1600 bar.

These gauges can be used for any gaseous media or low viscous fluid that does not corrode the brass parts. Their special mechanical design and case filling provide best properties for the use in marine applications.

- Crimped on ring case, stainless steel 1.4301
- Nominal size 63, 80 and 100 mm
- Filled with glycerine
- Bottom or rear connection
- Connection thread: G $\frac{1}{2}$  (G $\frac{1}{4}$  for 63 mm), brass
- Optional with mounting flange or U-clamp
- Accuracy
  - Class 1 for nominal size 80 and 100 mm
  - Class 1.6 for nominal size 63 mm
- GL-Certificate available on request



**Bottom connection** with rear flange



**Back connection** direct mounting



**Back connection** with front flange



**Back connection** with U-clamp



## Types and dimensions

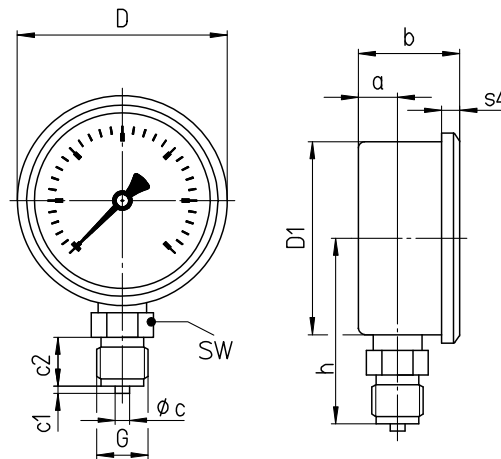


Fig.1: Bottom connection

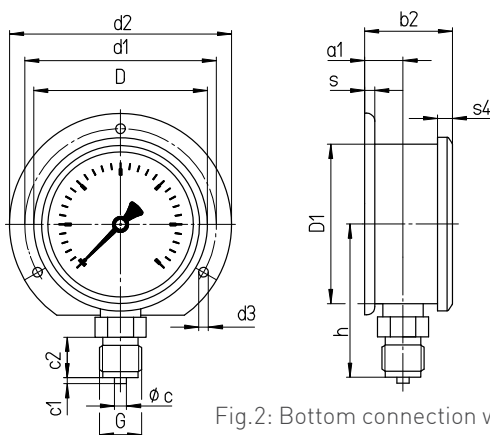


Fig.2: Bottom connection with rear flange

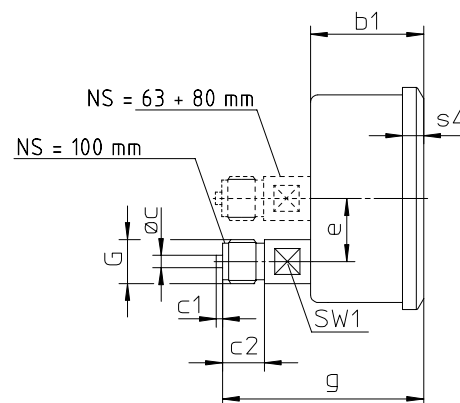


Fig.3: Back connection

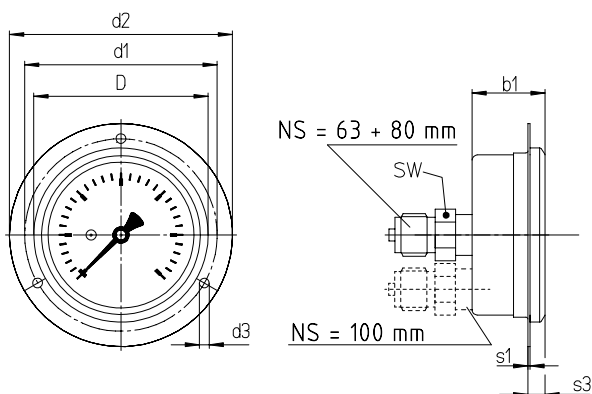


Fig.4: Back connection with front flange

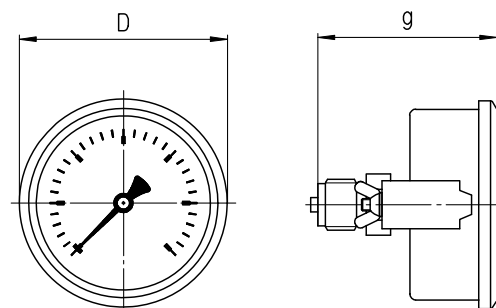


Fig.5: Back connection with U-clamp

NG	D	D1	a	a1	b	b1	b2	c	c1	c2	d1	d2	d3	e	G	g	h	s	s1	s3	SW
63	68	62	13	14	32	32	33	5	2	13	75	85	3.6	-	G $\frac{1}{4}$	58	54	1	1	4.5	14
80	86	79	16	19	41.5	36	44	6	3	20	95	110	4.8	-	G $\frac{1}{2}$	74	76	5	1	9	22
100	107	99	15.5	14	48	48	49	6	3	20	115	132	5.1	30	G $\frac{1}{2}$	81.5	87	1	1	6	22

## Order code

Order example		MREM	1	1	1	305	00	G	ISSA-Code	IMPA-Code
		MREM								
		MREG								
<b>Nominal size</b>	63 mm (MREM)		1							
	80 mm (MREG)		2							
	100 mm (MREM)**		3							
<b>Bottom connection</b>	G¼ (63 mm)			1						
<b>Bottom connection</b>	G½ (80 mm / 100 mm)			1						
<b>Center back connection</b>	G¼ (63 mm)			5						
<b>Center back connection</b>	G½ (80 mm)			2						
<b>Lower back connection</b>	G½ (100 mm)**			2						
<b>Connection thread material</b>	Brass				1				61.230.01	653101
	Stainless steel (for 1000 / 1600 bar only)				3				-	-
<b>Display range (bar)</b>	-1...0					315			61.230.20	653339
	-1...0.6					505				
	-1...1.5					515				
	-1...3					525				
	-1...5					535		or		or
	-1...9					545				
	-1...15					555				
	0...0.6					015				
	0...1					025			61.234.05	65 15
	0...1.6					035			-	(general number)
	0...2.5					045			61.234.80	
	0...4					055				
	0...6					065				
	0...10					075				
	0...16					085		or		or
	0...25					095				
	0...40					105				
	0...60					115				
	0...100					125			61.235.00	653001
	0...160					135			-	-
	0...250					145			61.239.12	653075
	0...400					155				
	0...600					165				
	0...1000* (only 100 mm dial size)**					175				
	0...1600* (only 100 mm dial size)**					185				
<b>Bottom connection</b>	Direct mounting								00	
	Back flange								10	
<b>Back connection</b>	Direct mounting								00	
	Front flange								20	
	U-clamp								30	
<b>Case filling</b>	Glycerine								G	

\* With stainless steel connection \*\* Only type MRE-g

Please ask for customised specifications



# Bourdon tube pressure gauges, special version

For separators for flow measurement, type MRE-g, nominal size 63 mm

SIKA manometers for separators with 63 mm stainless-steel housing are especially suitable for flow measurement dependent on the pressure on the separators. Depending on the separator, various display ranges are available.

- Pressure gauges compliant with EN 837-1
- Stainless steel case with crimped-on ring
- Brass threaded connection
- Connection at bottom G1/4 B
- EN 837-1 accuracy class 1.6
- Protection class IP65 / EN 60529
- DNV GL type approval available

## Case type

The stainless steel case is available with a crimped-on ring. Case ventilation is provided by a pressure equalisation insert.

## Display ranges

Multiple scales in bar, l/h and USg/h

## Degree of protection according to EN 60529

IP65 for filled case with closed pressure equalisation insert

## Dial

Aluminium, white with black scale markings.

## Window

Instrument glass

## Pointer movement

CrNi-Steel

## Connection threads and materials

The pressure gauges have a stainless steel connection thread and bourdon tube.



## Temperature range

- **Storage temperature**  
-20...70 °C
- **Ambient operating temperature**  
-20...60 °C
- **Media temperature**  
Up to 160 °C

## Ambient temperature sensitivity

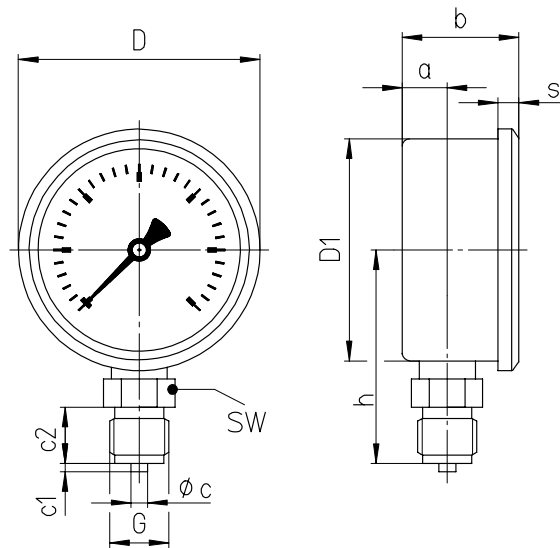
The pressure gauges are calibrated at a reference temperature of 20 °C. At other operating temperatures the maximum indication error is  $\pm 0.4$  % of full scale value per 10 °C difference in accordance with EN 837-1.

Maximum pressure load	
Static load	75 % of full-scale value
Dynamic load	65 % of full-scale value
Overload	2-times of full-scale value

Display ranges		
0...1 bar	150...400 l/h	40...100 USg/h
0...1 bar	300...800 l/h	80...200 USg/h
0...1 bar	400...1200 l/h	60...320 USg/h
0...1 bar	500...2500 l/h	180...660 USg/h
0...1 bar	500...4000 l/h	100...1100 USg/h
0...1 bar	1000...6000 l/h	300...1500 USg/h
0...1 bar	2000...12000 l/h	500...3200 USg/h
0...2.5 bar	2000...16000 l/h	1000...4300 USg/h

# Types and dimensions

## Bottom connection



Dimensions [mm]

NS	D	D1	a	a1	b	b1	b2	c	c1	c2	d1	d2	d3	e	G	g	h	s	s1	s3	SW
63	67	62	10	13	33	37	36	5	2	13	75	85	3.6	18	G $\frac{1}{4}$ B	60	54	5	1	9,5	14

## Order code

Order example		MREG	1	1	3	02513	G	DA
<b>SIKA bourdon tube pressure gauges for separators</b>								
Crimped on ring case		MREG						
<b>Nominal size</b>								
63 mm			1					
<b>Connection thread</b>								
G¼ B bottom				1				
<b>Connection material</b>								
Stainless steel					3			
<b>Display range</b>								
<b>Pressure</b>	<b>Flow rate</b>							
0...1 bar	2000...12 000 l/h, 500...3200 USg/h					02513		
0...1 bar	1000...6000 l/h, 3000...1500 USg/h					02523		
0...1 bar	150...400 l/h, 40...100 USg/h					02533		
0...1 bar	300...800 l/h, 80...200 USg/h					02543		
0...1 bar	400...1200 l/h, 60...320 USg/h					02553		
0...1 bar	500...4000 l/h, 100...1100 USg/h					02544		
0...2.5 bar	2000...16 000 l/h, 1000...4300 USg/h					04503		
<b>Case filling</b>								
Glycerine							G	
<b>Additional product information</b>								
Flow indicators								DA



# Bourdon tube pressure gauges, chiller version

## Type MREG-K, nominal sizes 63, 80 and 100 mm

We manufacture pressure gauges specifically designed for use in refrigeration and chiller systems and specifically adapted to this application. They have scales showing both the pressure and the pressure-dependent evaporation temperature of the corresponding refrigerant. Some of these pressure gauges also have additional safety features according to the hazard classification of the refrigerant.

- Stainless steel crimped ring case
- Bottom or rear connection
- Brass connection (stainless steel for R717)
- EN 837-1 accuracy class 1 (class 1.6 with 63 mm case)
- Standard display ranges -1 to 15 bar, -1 to 24 bar, -1 to 30 bar
- Standard refrigerants R134a, R404a, R407c, R507, R717

### Designed and built for safety

Refrigerants are classified into three groups according to VBG 20 Sect. 3:

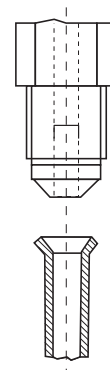
- Group 1:  
Non-flammable refrigerants with no harmful impact on health
- Group 2:  
Toxic or corrosive refrigerants and refrigerants with a lower explosion limit of at least 3.5 % by volume when mixed with air
- Group 3:  
As group 2, but with an explosion limit below 3.5 % by volume

SIKA refrigeration pressure gauges comply with EN 837-1 safety level S2 for refrigerants in groups 1 and 2 and EN 837-1 safety level S3 for refrigerants in group 3.



### Option

Thread 7/16"-20 UNF with tapered seal according to DIN 3866 for solderless connection to 6 mm tubing (1/4" flare)



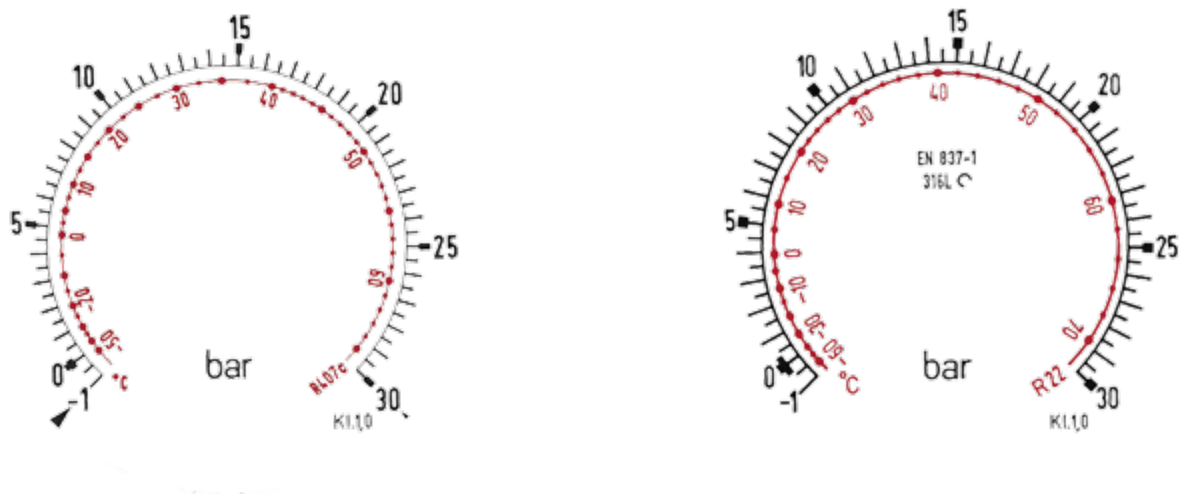
*The provisions of the EN 837-2 standard should be observed when using pressure gauges.*

## Scales and types

### Scales

Our gauges are available with standard display ranges of -1...15 bar, -1...24 bar and -1...30 bar. The scale plates are printed with combined pressure and temperature scales. The pressure scales are in bar, kPa / MPa or psi; the temperature scales are in °C or °F and match the evaporation pressure curve of the corresponding refrigerant. In accordance with DIN 16112, the temperature scales are implemented as „dot scales“ and are usually printed in colour. Gauges with scales for more than one refrigerant can be supplied on request. SIKA offers a wide variety of ready-made special scales for individual measuring ranges and refrigerants. Please contact us to discuss your needs.

### Examples of DIN 16112 compliant scales for R22 and R407c



### Connection threads and materials

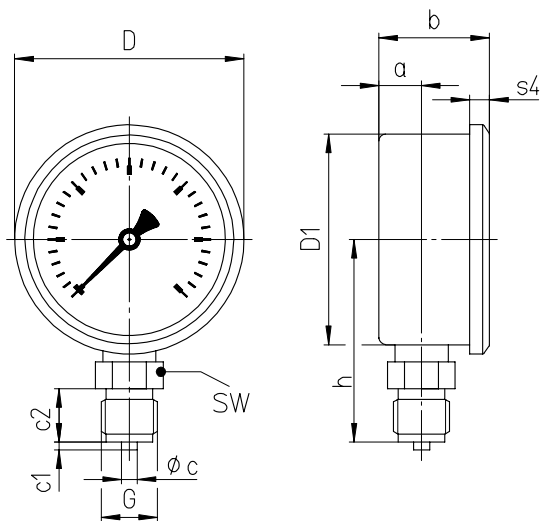
All pressure gauges have standard G $\frac{1}{4}$  B or G $\frac{1}{2}$  B thread (also available with NPT thread). As an option, we can supply pressure gauges with  $\frac{1}{4}$ " flare connection according to the diagram. The components in contact with the medium being measured are made from brass or bronze. Non-ferrous metals are not allowed in gauges for use with ammonia refrigerant (R717, NH $_3$ ), so stainless steel alloys are used for this purpose.

### Case

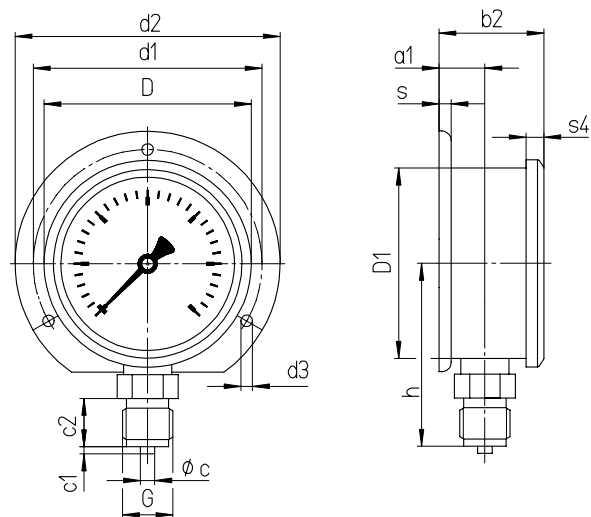
Cases of refrigeration pressure gauges can be painted in colour on request to enable the gauges to be visually associated with the corresponding cooling circuits and allow the system to be laid out for easier comprehension. For example, red may be used for the high-pressure side and blue for the low-pressure side.

# Types and dimensions

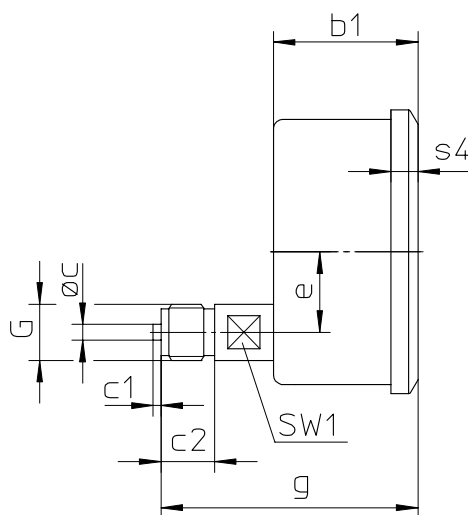
## Bottom connection



## Bottom connection with rear flange

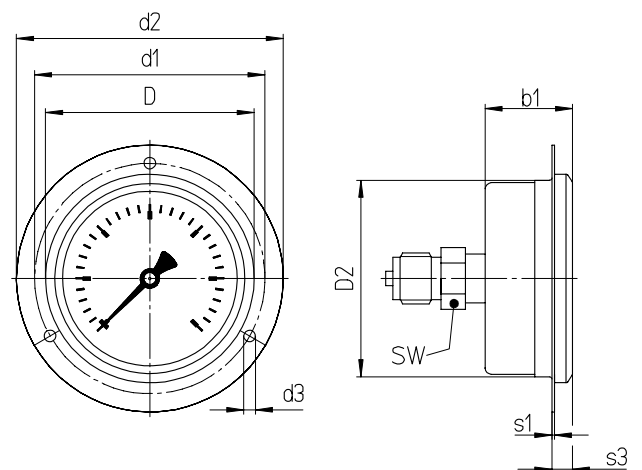


## Lower back connection\*



\* Nominal size 80 mm has connection at centre back

## Center back connection with front flange



### Dimensions [mm]

NS	D	D1	a	a1	b	b1	b2	c	c1	c2	d1	d2	d3	e	G	g	h	s	s1	s3	SW
63	67	62	10	13	33	37	36	5	2	13	75	85	3.6	18	G $\frac{1}{4}$ B	60	54	5	1	9.5	14
80	86	79	16	19	41.5	36	44	6	3	20	95	110	4.8		G $\frac{1}{2}$ B	74	76	5	1	9	22
100	106	99	20	23.5	54	54	57.5	6	3	20	116	132	4.8	30	G $\frac{1}{2}$ B	96	87	6	1	11.5	22

## Order code

Order example		MREGK	1	1	1	K13	0	0	0
<b>SIKA chiller pressure gauges</b>									
Crimped on ring case (standard with liquid-filled case)		MREGK							
<b>Nominal size</b>									
63 mm			1						
80 mm (not available for all refrigerants)			2						
100 mm			3						
<b>Connection thread</b>									
Ø 63 mm case	G¼ B bottom		1						
	G¼ B lower back connection		2						
	G¼ B center back connection		5						
	¼ NPT bottom		M						
	¼ NPT lower back connection		N						
Ø 80 mm case	¼ NPT center back connection		S						
	G½ B bottom		1						
Ø 100 mm case	G½ B center back connection		2						
	G½ B bottom		1						
	G½ B lower back connection		2						
	¼ flare bottom	only with brass connection	F						
	¼ flare rear	only with brass connection	U						
<b>Connection material</b>									
Brass			1						
Stainless steel			3						
<b>Refrigerant and display range</b>									
R134a	-1...15 bar					K13			
	-1...24 bar					K14			
R404a	-1...15 bar					K16			
	-1...24 bar					K17			
R407c	-1...15 bar					K39			
	-1...24 bar					K41			
R507	-1...15 bar					K42			
	-1...24 bar					K43			
R717 (NH3)	-1...15 bar					K01			
(NS 63 mm / NS 100 mm, with st. st. connection)	-1...24 bar					K02			
	-1...30 bar					K03			
<b>Multiple scales*</b>									
R12 / R22 / R134a	-1...15 bar					K24			
	-1...24 bar					K25			
	-1...30 bar					K27			
R22 / R134a / R404a	-1...15 bar					K37			
	-1...24 bar					K44			
	-1...30 bar					K36			
<b>Mounting flange</b>									
None							0		
Rear flange							1		
Front flange							2		
<b>Option</b>									
None								0	
<b>Case filling</b>									
Unfilled case									0
Filled case (glycerine)									G

\* Some refrigerant and display range options are not available with all case sizes. Please enquire regarding the required gauge types.