Measuring Instruments for Marine Applications

SIKA Dr.Siebert & Kühn GmbH & Co. KG · Struthweg 7–9 • 34260 Kaufungen • Germany • ☎.: +49 5605 803-0 • Fax: +49 5605 803-54 • e-mail: info@sika.net • www.SIKA.net

SIKA measuring instruments for marine applications

Safety and precision on all oceans!

A name which means reliability

For more than 60 years SIKA has gained experience in the field of measuring technique for the marine industry. All well-known European makers of Diesel engines and their world-wide licensees as well as many shipyards are our customers.

All products shown in this catalogue are suitable for use in the marine field. Most of them are approved by German Lloyd.

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Industrial Thermometers

Casing

Aluminium, V-shaped, completely polished, gold-coloured anodized. Numbers of reading scale printed on the right side. Printing black-coloured for easy reading. Adjustable to any requested position and locked by brass nut, spanner size 22 mm. Angle thermometers (90 degrees) with grooved adapter piece and set screw. Advantage: When mounting the thermometer, it is not necessary to turn the casing.

Glass Inserts, Capillaries

Capillary tube of solid glass, prismatic (optic enlargement of the column), oval opening, with yellow back for mercury and white back for blue liquid column. Graduation of scale is deeply burnt in, thus being absolutely resistant. The main graduations, which correspond with the printing on the casing, are especially clearly outlined.

Capillary Fluid

For standard types from -60 °C to +250 °C, blue liquid and for -60 °C red fluid. For temperatures above +250 °C, only mercury columns are possible.

Immersion Tubes, Pockets

Standard: brass (code “Ms”) for temperatures up to 250 °C, for temperatures above 250 °C steel (Code “St”). Seawater resistant alloys are available on request (special alloy “SoMs59", ”SoMs76" or “CuNi30Fe"). For corrosive alkalis or acids, material 1.4571 (stainless steel) or other resistant steels are available.

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Industrial Thermometers

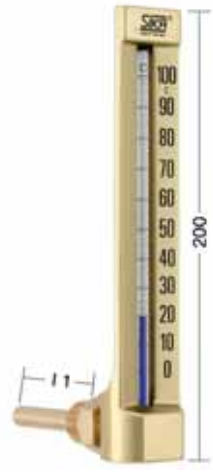
DIN 16189 B, DIN 16190 B

SIKA Thermometer, straight type

- Casing 200 x 36 mm, Type 271 B
- DIN 16189 B
- Thread connection: G½A = ½" BSP
- Approved by German Lloyd Certificate No. 94 654-94 HH

Order code for complete instruments									
Range [°C]	Immersion length [l1] 63 mm			Immersion length [l1] 100 mm			Immersion length [l1] 160 mm		
	SIKA 2712 ...	ISSA 61...	IMPA	SIKA 2712 ...	ISSA 61...	IMPA	SIKA 2712 ...	ISSA 61...	IMPA
-60 +40	...641106321	...110.01		...641110021	...110.02		...641116021	...110.03	
-30 +50	...351106321	...110.10	651901	...351110021	...110.11	651902	...351116021	...110.12	651903
0 +60	...061106321	...110.16		...061110021	...110.17		...061116021	...110.18	
0 +100	...101106321	...110.22	651904	...101110021	...110.23	651905	...101116021	...110.24	651906
0 +120	...121106321	...110.28		...121110021	...110.29		...121116021	...110.30	
0 +160	...161106321	...110.34	651907	...161110021	...110.35	651908	...161116021	...110.36	651909
0 +250	...251106321			...251110021			...251116021		
0 +600	...601206322	...110.80	651922	...601210022	...110.81	651923	...601216022	...110.82	651924

SIKA Thermometer, angle type 90°



- Casing 200 x 36 mm, Type 272 B
- DIN 16190 B
- Thread connection: G½A = ½" BSP
- Approved by German Lloyd Certificate No. 94 654-94 HH

Order code for complete instruments									
Range [°C]	Immersion length [l1] 63 mm			Immersion length [l1] 100 mm			Immersion length [l1] 160 mm		
	SIKA 2722 ...	ISSA 61...	IMPA	SIKA 2722 ...	ISSA 61...	IMPA	SIKA 2722 ...	ISSA 61...	IMPA
-60 +40	...641106321	...113.01		...641110021	...113.02		...641116021	...113.03	
-30 +50	...351106321	...113.05	652001	...351110021	...113.06	652002	...351116021	...113.07	652003
0 +60	...061106321	...113.08		...061110021	...113.09		...061116021	...113.10	
0 +100	...101106321	...113.11	652004	...101110021	...113.12	652005	...101116021	...113.13	652006
0 +120	...121106321	...113.14		...121110021	...113.15		...121116021	...113.16	
0 +160	...161106321	...113.17	652007	...161110021	...113.18	652008	...161116021	...113.19	652009
0 +250	...251106321			...251110021			...251116021		
0 +600	...601206322	...113.40	652022	...601210022	...113.41	652023	...601216022	...113.42	652024

Also available with thread connections: G ¾ A, M20x1.5, M27x2, ½" NPT

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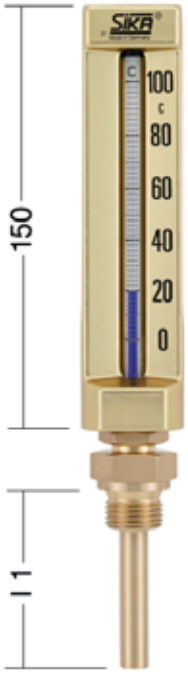
Industrial Thermometers

DIN 16185 B, DIN 16186 B

SIKA Thermometer, straight type

- Casing 150 x 36 mm, Type 291 B
- DIN 16185 B
- Thread connection: G½A = ½" BSP
- Approved by German Lloyd Certificate No. 94 654-94 HH

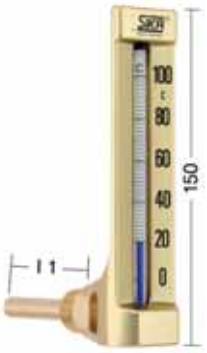
Order code for complete instruments									
Range [°C]	Immersion length [l1] 63 mm			Immersion length [l1] 100 mm			Immersion length [l1] 160 mm		
	SIKA 2912 ...	ISSA 61...	IMPA	SIKA 2912 ...	ISSA 61...	IMPA	SIKA 2912 ...	ISSA 61...	IMPA
-60 +40	...641106321	...111.01		...641110021	...111.02		...641116021	...111.03	
-30 +50	...351106321	...111.10	651941	...351110021	...111.11	651942	...351116021	...111.12	651943
0 +60	...061106321	...111.16		...061110021	...111.17		...061116021	...111.18	
0 +100	...101106321	...111.22	651944	...101110021	...111.23	651945	...101116021	...111.24	651946
0 +120	...121106321	...111.28		...121110021	...111.29		...121116021	...111.30	
0 +160	...161106321	...111.34	651947	...161110021	...111.35	651948	...161116021	...111.36	651949
0 +250	...251106321			...251110021			...251116021		
0 +600	...601206322	...111.80	651962	...601210022	...111.81	651963	...601216022	...111.82	651964



SIKA Thermometer, angle type 90°

- Casing 150 x 36 mm, Type 292 B
- DIN 16186 B
- Thread connection: G½A = ½" BSP
- Approved by German Lloyd Certificate No. 94 654-94 HH

Order code for complete instruments									
Range [°C]	Immersion length [l1] 63 mm			Immersion length [l1] 100 mm			Immersion length [l1] 160 mm		
	SIKA 2922 ...	ISSA 61...	IMPA	SIKA 2922 ...	ISSA 61...	IMPA	SIKA 2922 ...	ISSA 61...	IMPA
-60 +40	...641106321	...114.03		...641110021	...114.04		...641116021	...114.05	
-30 +50	...351106321	...114.08	652041	...351110021	...114.09	652042	...351116021	...114.10	652043
0 +60	...061106321	...114.13		...061110021	...114.14		...061116021	...114.15	
0 +100	...101106321	...114.18	652044	...101110021	...114.19	652045	...101116021	...114.20	652046
0 +120	...121106321	...114.23		...121110021	...114.24		...121116021	...114.25	
0 +160	...161106321	...114.28	652047	...161110021	...114.29	652048	...161116021	...114.30	652049
0 +250	...251106321			...251110021			...251116021		
0 +600	...601206322	...114.43	652062	...601210022	...114.44	652063	...601216022	...114.45	652064



Also available with thread connections: G¾A, M20x1.5, M27x2, ½" NPT

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Industrial Thermometers

DIN 16181 B, DIN 16182 B

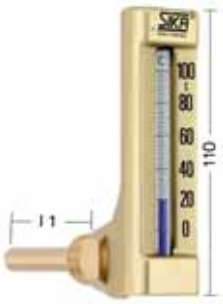
SIKA Thermometer, straight type

- Casing 110 x 30 mm,Type 174 B
- DIN 16181 B
- Thread connection: G½A = ½" BSP
- Approved by German Lloyd Certificate No. 94 654-94 HH

Order code for complete instruments									
Range [°C]	Immersion length [l1] 30 mm			Immersion length [l1] 40 mm			Immersion length [l1] 63 mm		
	SIKA 1742 ...	ISSA 61...	IMPA	SIKA 1742 ...	ISSA 61...	IMPA	SIKA 1742 ...	ISSA 61...	IMPA
-30 +50	...351103021			...351104021			...351106321	...112.07	
0 +60	...061103021			...061104021			...061106321	...112.13	
0 +100	...101103021		651981	...101104021		651982	...101106321	...112.19	651983
0 +120	...121103021			...121104021			...121106321	...112.25	
0 +160	...161103021			...161104021			...161106321	...112.31	
0 +200	...201103021		651986	...201104021		651987	...201106321		651988
	Immersion length [l1] 100 mm			Immersion length [l1] 160 mm					
-30 +50	...351110021	...112.08		...351116021	...112.09				
0 +60	...061110021	...112.14		...061116021	...112.15				
0 +100	...101110021	...112.20	651984	...101116021	...112.21	651985			
0 +120	...121110021	...112.26		...121116021	...112.27				
0 +160	...161110021	...112.32		...161116021	...112.33				
0 +200	...201110021		651989	...201116021		651990			

SIKA Thermometer, angle type 90°

- Casing 110 x 30 mm, Type 175 B
- DIN 16182 B
- Thread connection: G½A = ½" BSP
- Approved by German Lloyd Certificate No. 94 654-94 HH



Order code for complete instruments									
Range [°C]	Immersion length [l1] 30 mm			Immersion length [l1] 40 mm			Immersion length [l1] 63 mm		
	SIKA 1752 ...	ISSA 61...	IMPA	SIKA 1752 ...	ISSA 61...	IMPA	SIKA 1752 ...	ISSA 61...	IMPA
-30 +50	...351103021			...351104021	...115.06		...351106321	...115.08	
0 +60	...061103021			...061104021	...115.11		...061106321	...115.13	
0 +100	...101103021		652081	...101104021	...115.16	652082	...101106321	...115.18	652083
0 +120	...121103021			...121104021	...115.21		...121106321	...115.23	
0 +160	...161103021			...161104021	...115.26		...161106321	...115.28	
0 +200	...201103021		652086	...201104021		652087	...201106321		652088
	Immersion length [l1] 100 mm			Immersion length [l1] 160 mm					
-30 +50	...351110021	...115.09		...351116021	...115.10				
0 +60	...061110021	...115.14		...061116021	...115.15				
0 +100	...101110021	...115.19	652084	...101116021	...115.20	652085			
0 +120	...121110021	...115.24		...121116021	...115.25				
0 +160	...161110021	...115.29		...161116021	...115.30				
0 +200	...201110021		652089	...201116021		652090			

Also available with thread connections: G¾A, M20x1.5, M27x2, ½" NPT

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Thermometer Inserts (Capillaries)
for replacement

founded 1901
Dr. Siebert & Kühn GmbH & Co. KG

SIKA Inserts for Thermometer

Thermometer execution — **Code,instead of XXXX**

- Straight type 271B, casing 200 mm — Code 2712
- Angle 90° type 272 B, casing 200 mm — Code 2722
- Straight type 291B, casing 150 mm — Code 2912
- Angle 90° type 292B, casing 150 mm — Code 2922

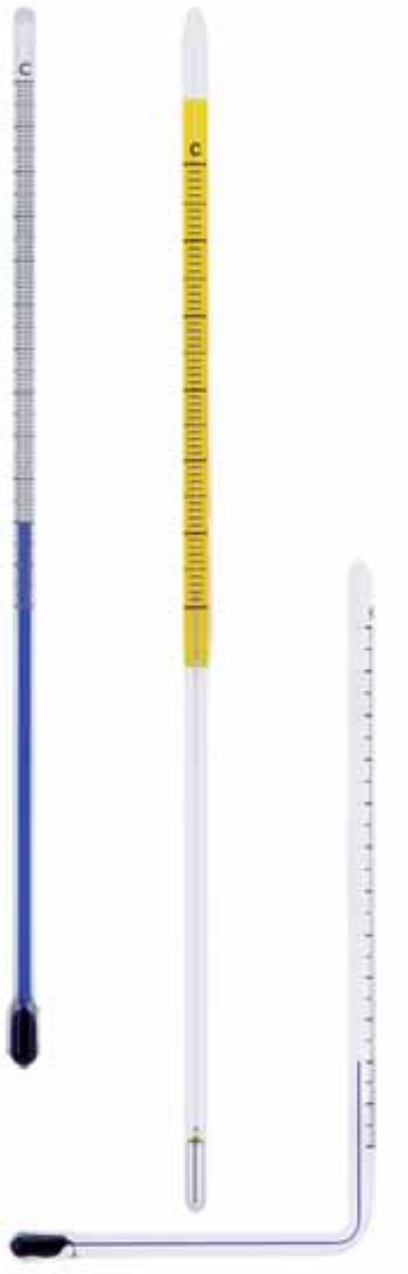
Order code for inserts (capillaries)			
Range [°C]	Immersion length [l1]		
	63 mm	100 mm	160 mm
-60 +40	XXXX 6411063	XXXX 6411100	XXXX 6411160
-30 +50	XXXX 3511063	XXXX 3511100	XXXX 3511160
0 +60	XXXX 0611063	XXXX 0611100	XXXX 0611160
0 +100	XXXX 1011063	XXXX 1011100	XXXX 1011160
0 +120	XXXX 1211063	XXXX 1211100	XXXX 1211160
0 +160	XXXX 1611063	XXXX 1611100	XXXX 1611160
0 +200	XXXX 2011063	XXXX 2011100	XXXX 2011160
0 +300	XXXX 3012063	XXXX 3012100	XXXX 3012160
0 +400	XXXX 4012063	XXXX 4012100	XXXX 4012160
0 +500	XXXX 5012063	XXXX 5012100	XXXX 5012160
0 +600	XXXX 6012063	XXXX 6012100	XXXX 6012160

Thermometer execution — **Code instead of XXXX**

- Straight type 174B, casing 110 mm — Code 1742
- Angle 90° type 175B, casing 110 mm — Code 1752

Order code for inserts (capillaries)					
Range [°C]	Immersion length [l1]				
	30 mm	40 mm	63 mm	100 mm	160 mm
-30 +50	XXXX 3511030	XXXX 3511040	XXXX 3511063	XXXX 3511100	XXXX 3511160
0 +60	XXXX 0611030	XXXX 0611040	XXXX 0611063	XXXX 0611100	XXXX 0611160
0 +100	XXXX 1011030	XXXX 1011040	XXXX 1011063	XXXX 1011100	XXXX 1011160
0 +120	XXXX 1211030	XXXX 1211040	XXXX 1211063	XXXX 1211100	XXXX 1211160
0 +160	XXXX 1611030	XXXX 1611040	XXXX 1611063	XXXX 1611100	XXXX 1611160
0 +200	XXXX 2011030	XXXX 2011040	XXXX 2011063	XXXX 2011100	XXXX 2011160

Attention:
The exact order text is marked on the back of the capillary: DIN No., range, immersion length.



Mounting material will be supplied.

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Pressure Gauges

SIKA-pressure gauges, type MRE-g

Bottom connection direct mounting

- Ring clamped on
- Stainless steel 1.4301
- Filled with glycerine
- Thread connection brass
- Accuracy
  Case dia 63 mm class 1.6
  Case dia 80 mm and 100 mm class 1.0
- Approved by German Lloyd Certificate No. 13 675-99 HH

Dimensions [mm] - See figures page 9, right side

NG	D	D1	a	a1	b	b1	b2	c	c1	c2	d1
63	62	67	12,5	15,5	35	36	38	5	2	13	75
80	79	86	16	21	44	38,5	46	6	3	20	95
100	99	106	20	23,5	55	55	58,5	6	3	20	116

NG	d2	d3	e	G	g	h	s	s1	s2	s3	SW
63	85	3,7	18	G 1/4 B	58	54	8,5	5	1	4,5	14
80	110	4,8	-	G ½ B	82	76	9	5	1	6	22
100	132	4,8	30	G ½ B	97	87	10	6	1	6	22

Bottom connection with back flange

Order Code

Measuring ranges [bar] - Insert in order code table page 9

Range	SIKA-Order-Code	Range	SIKA-Order-Code	Range	SIKA-Order-Code
-0,6/0	MREGxxx305xxx	-1/0	MREGxxx315xxx	-1/0,6	MREGxxx505xxx
-1/1,5	MREGxxx515xxx	-1/3	MREGxxx525xxx	-1/5	MREGxxx535xxx
-1/9	MREGxxx545xxx	-1/15	MREGxxx555xxx	0/0,6	MREGxxx015xxx
0/1	MREGxxx025xxx	0/1,6	MREGxxx035xxx	0/2,5	MREGxxx045xxx
0/4	MREGxxx055xxx	0/6	MREGxxx065xxx	0/10	MREGxxx075xxx
0/16	MREGxxx085xxx	0/25	MREGxxx095xxx	0/40	MREGxxx105xxx
0/60	MREGxxx115xxx	0/100	MREGxxx125xxx	0/160	MREGxxx135xxx
0/250	MREGxxx145xxx	0/400	MREGxxx155xxx	0/600	MREGxxx165xxx
0/1000	MREGxxx175xxx	0/1600	MREGxxx185xxx		

Rear connection direct mounting

Rear connection with front flange

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Order Code

Bottom connection direct mounting (fig. 1)

Dial size	SIKA-Order-Code	ISSA-Code	IMPA-Code
63 mm (class 1.6)	MREG111xxx00G	61.232.01	65 15 ...
80 mm (class 1.0)	MREG211xxx00G	61.232.02	65 15 ...
100 mm (class 1.0)	MREG311xxx00G	61.232.03	65 15 ...

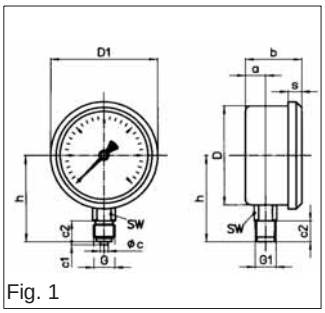

Fig. 1

Bottom connection with back flange (fig. 2)

Dial size	SIKA-Order-Code	ISSA-Code	IMPA-Code
63 mm (class 1.6)	MREG111xxx10G	61.232.04	65 15 ...
80 mm (class 1.0)	MREG211xxx10G	61.232.05	65 15 ...
100 mm (class 1.0)	MREG311xxx10G	61.232.06	65 15 ...

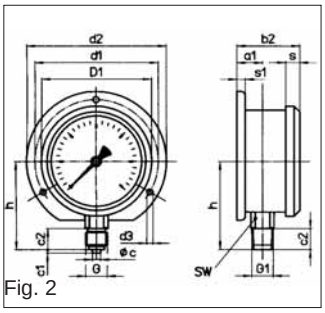

Fig. 2

Rear connection direct mounting (fig. 3)

Dial size	SIKA-Order-Code	ISSA-Code	IMPA-Code
63 mm (class 1.6)	MREG121xxx00G	61.232.13	65 15 ...
80 mm (class 1.0)	MREG221xxx00G	61.232.14	65 15 ...
100 mm (class 1.0)	MREG321xxx00G	61.232.15	65 15 ...

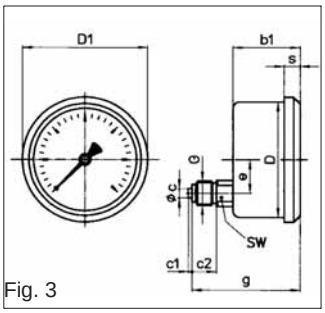

Fig. 3

Rear connection with front flange (fig. 4)

Dial size	SIKA-Order-Code	ISSA-Code	IMPA-Code
63 mm (class 1.6)	MREG121xxx20G	61.232.10	65 15 ...
80 mm (class 1.0)	MREG221xxx20G	61.232.11	65 15 ...
100 mm (class 1.0)	MREG321xxx20G	61.232.12	65 15 ...

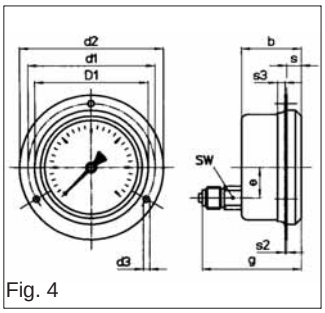

Fig. 4

Rear connection with u-clamp fixing (fig. 5)

Dial size	SIKA-Order-Code	ISSA-Code	IMPA-Code
63 mm (class 1.6)	MREG121xxx30G	61.232.07	65 15 ...
80 mm (class 1.0)	MREG221xxx30G	61.232.08	65 15 ...
100 mm (class 1.0)	MREG321xxx30G	61.232.09	65 15 ...

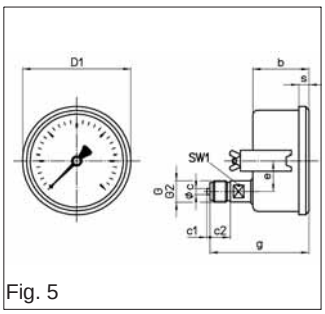

Fig. 5

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Exhaust Gas Thermometers

direct mounting

For extreme conditions

A problem to all Diesel engines is vibration, which makes reading of the exhaust temperature difficult. The thermometer then becomes worn and defective too soon.

SIKA has eliminated this problem with their exhaust thermometer.

It contains a shock absorbing liquid of high viscosity, which eliminates wear of the internal moving parts made sensitive by vibration. At the same time, lubrication of moving parts is taken care of by the liquid, thus obviating corrosion.

- Approved by German Lloyd Certificate No. 12 026-98 HH

Range

- +50 +650°C
- Double scale °C and °F available

Technical Data

Casing	Dia. 80 or 100 mm stainless steel 1.4301
Dial	White, black markings
System	Nitrogen filled system
Immersion tube	Heat resistant steel
Standard dimension lengths “DL" in mm	100, 160, 200, 250, 300, 400
Thread connection	Adjustable clamp screw
Size	½" BSP, ¾" BSP, other threads sizes upon request
Accuracy	Class 1.0, Limits of error acc. DIN EN 13190
Type	**Case configuration**
Casing dia. 80 mm	
8312	Bottom connection
8372	Rear connection
Casing dia. 100 mm	
1312	Bottom connection
1372	Rear connection

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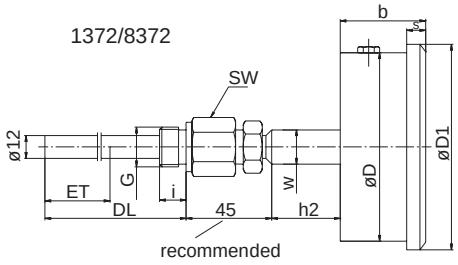
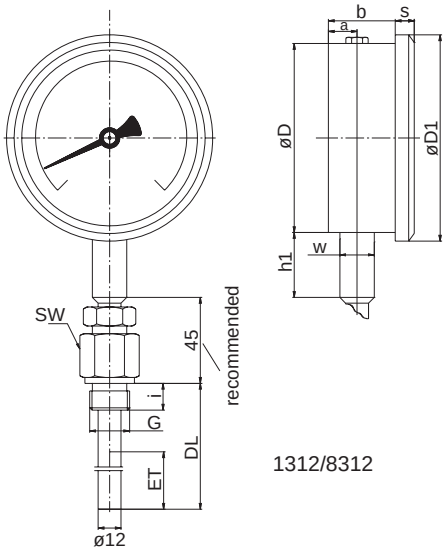
Dimensions (mm)

NG	a	b	D	D1	h1	h2	s	W
80	15	45	79	86	34	36	10	18
100	15	45	99	108	34	36	10	18





Order Code for Type Z1312 bottom connection with adjustable clamp screw

Mounting length DL	SIKA-Order-Code	ISSA- Code	IMPA-Code
Case dia 100 mm = Z1312...			
100 mm, G½	...M56110022	61.126.01	65 25
160 mm, G½	...M56116022	61.126.02	65 25
200 mm, G½	...M56120022	61.126.03	65 25
100 mm, G¾	...M56110032	61.126.05	65 25
160 mm, G¾	...M56116032	61.126.06	65 25
200 mm, G¾	...M56120032	61.126.07	65 25
250 mm, G½	...M56125022	61.126.10	65 25
300 mm, G½	...M56130022	61.126.11	65 25
400 mm, G½	...M56140022	61.126.12	65 25
500 mm, G½	...M56150022	61.126.13	65 25
250 mm, G¾	...M56125032	61.126.15	65 25
300 mm, G¾	...M56130032	61.126.16	65 25
400 mm, G¾	...M56140032	61.126.17	65 25
500 mm, G¾	...M56150032	61.126.18	65 25
SIKA Order code for case dia 80 mm = Z8312...			

SIKA Order code for thermometer rear connection
- case dia 100 mm = Z1372...
- case dia 80 mm = Z8372...

Note for ordering
When ordering standard types, please use order numbers. If changes, e.g. in range, immersion tube materials, stem lengths or connections are required, they have to be specified in your order.

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Exhaust Gas Thermometers

remote reading

For extreme conditions

Type 311

SIKA remote reading thermometers are based on the same system as our wellknown direct mounting exhaust thermometers.

Basic units may be instantly adapted to the customers present needs by fitting any of the optional accessories: wall bracket or u-clamp for panel mounting.

The case is filled with a shock absorbing liquid of high viscosity.

- Approved by German Lloyd Certificate No. 12 027-98 HH

Range

- +50 +650°C
- Double scale °C and °F available

Type 321

Technical Data

Casing	Dia. 80 or 100 mm stainless steel 1.4301
Dial	White, black markings
System	Nitrogen filled system
Capillary tube	Stainless steel
Immersion tube	Heat resistant steel
Standard dimension lengths “DL" in mm	135, 160, 250, 300, 400
Thread connection	Adjustable clamp screw
Size	½" BSP, ¾" BSP, other thread sizes upon request
Accuracy	Class 1.0, Limits of error acc. DIN EN 13190
Type	**Case configuration**
311	Wall bracket
321	Surface mounting
331	U-clamp for panel mounting

Type 331

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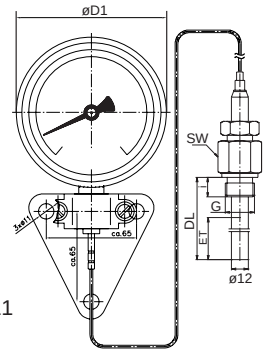
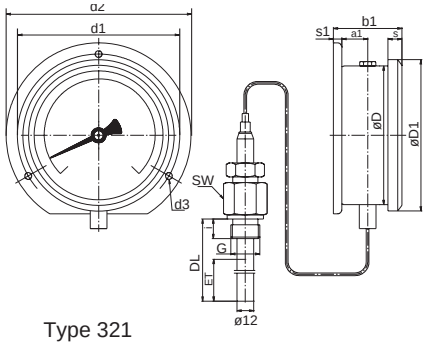
Dimensions (mm)

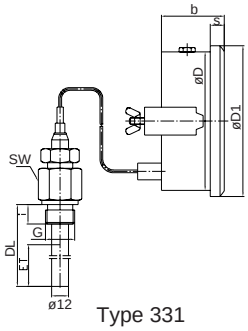
NG	a1	b1	D	D1	d1	d2	d3	s	s1
80	18	48	79	86	95	110	4,8	10	6
100	18,5	49	99	108	116	132	4,8	10	6



Type 311



Type 321



Type 331

Order Code for Type Z321

Mounting length DL	SIKA-Order-Code	ISSA- Code	IMPA-Code
Case dia 100 mm for surface mounting = Z321...			
135 mm, G½	...C256135922XX	61.129.01	65 25
160 mm, G½	...C256160922XX	61.129.02	65 25
200 mm, G½	...C256200922XX		65 25
250 mm, G½	...C256250922XX	61.129.03	65 25
300 mm, G½	...C256300922XX	61.129.04	65 25
400 mm, G½	...C256400922XX	61.129.05	65 25
135 mm, G¾	...C256135932XX	61.129.07	65 25
160 mm, G¾	...C256160932XX	61.129.10	65 25
200 mm, G¾	...C256200932XX		65 25
250 mm, G¾	...C256250932XX	61.129.11	65 25
300 mm, G¾	...C256300932XX	61.129.12	65 25
400 mm, G¾	...C256400932XX	61.129.13	65 25
XX = please order the capillary length			

Thermometer with wall bracket type 311
SIKA-Order-Code Z311C2XXXXXXXXXX case dia 100

Thermometer with U-clamp for panel mounting type 331
SIKA-Order-Code Z331C2XXXXXXXXXX case dia 100

Thermometer with rear flange for panel mounting type 321
SIKA-Order-Code Z321B2XXXXXXXXXX case dia 80

Thermometer with wall bracket type 311
SIKA-Order-Code Z311B2XXXXXXXXXX case dia 80

Thermometer with U-clamp for panel mounting type 331
SIKA-Order-Code Z331B2XXXXXXXXXX case dia 80

Note for ordering
When ordering standard types, please use order numbers. If changes, e.g. in range, immersion tube materials, stem lengths or connections are required, they have to be specified in your order.

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Precision Dial Thermometers

gas filled system

Typical applications

- Cooling water
- Air
- Lubricating oil
- Approved by German Lloyd Certificate No. 12 026-98 HH

Range

- 0 +100 °C, 0 +120 °C, 0 +160 °C
- Double scale °C and °F available
- Other ranges upon request

Technical Data

Casing	Dia. 80 or 100 mm stainless steel 1.4301
Dial	White, black markings
System	Nitrogen filled system
Immersion tube	Heat resistant steel
Standard dimension lengths "DL" in mm	135, 160, 250, 300, 400
Thread connection	Adjustable clamp screw
Size	½" BSP, ¾" BSP, other thread sizes upon request
Accuracy	Class 1.0, Limits of error acc. DIN EN 13190
Type	**Case configuration**
Casing dia. 80 mm	
8312	Bottom connection
8372	Rear connection
Casing dia. 100 mm	
1312	Bottom connection
1372	Rear connection

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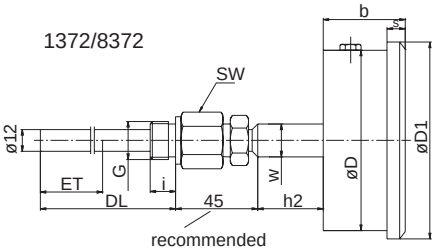
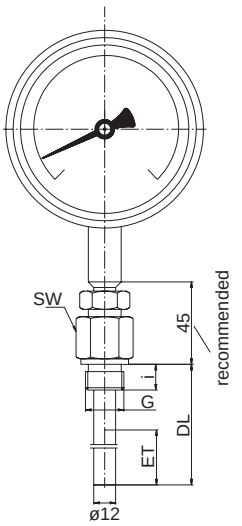
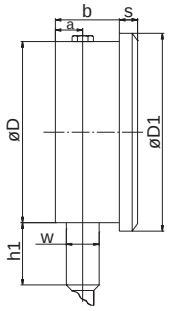
Dimensions (mm)

NG	a	b	D	D1	h1	h2	s	W
80	15	45	79	86	34	36	10	18
100	15	45	99	108	34	36	10	18

1372/8372







1312/8312

Order Code for Type Z1312 bottom connection with adjustable clamp screw

Mounting length DL	SIKA-Order-Code	ISSA- Code	IMPA-Code
Case dia 100 mm = Z1312...			
135 mm, G½	...MXX113522		65 25
160 mm, G½	...MXX116022		65 25
200 mm, G½	...MXX120022	61.125.01	65 25
250 mm, G½	...MXX125022	61.125.02	65 25
300 mm, G½	...MXX130022	61.125.03	65 25
135 mm, G¾	...MXX113532		65 25
160 mm, G¾	...MXX116032		65 25
200 mm, G¾	...MXX120032	61.125.05	65 25
250 mm, G¾	...MXX125032	61.125.06	65 25
300 mm, G¾	...MXX130032	61.125.07	65 25
400 mm, G½	...MXX140022	61.125.11	65 25
500 mm, G½	...MXX150022	61.125.12	65 25
400 mm, G¾	...MXX140032	61.125.16	65 25
500 mm, G¾	...MXX150032	61.125.17	65 25

SIKA Order code for case dia 80 mm = Z8312...

Order Example	XXXXXX10XXXXXX	for	Range 0 + 100°C
	XXXXXX12XXXXXX	for	Range 0 + 120°C
	XXXXXX16XXXXXX	for	Range 0 + 160°C

Other range on request

Note for ordering

When ordering standard types, please use order numbers. If changes, e.g. in range, immersion tube materials, stem lengths or connections are required, they have to be specified in your order.

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Precision Dial Thermometers

remote reading

Typical applications

Type 311

SIKA remote reading precision dial thermometers are based on the same system as our wellknown direct mounting precision dial thermometers.
Basic units may be instantly adapted to the customers present needs by fitting any of the optional accessories: wall bracket or u-clamp for panel mounting.
The case is filled with a shock absorbing liquid of high viscosity.

- Cooling water
- Air
- Lubricating oil
- Approved by German Lloyd Certificate No. 12 027-98 HH

Range

- 0 +120 °C, 0 +160 °C, 0 +250 °C
- Double scale °C and °F available
- other ranges upon request

Type 321

Technical Data

Casing	Dia. 80 or 100 mm stainless steel 1.4301
Dial	White, black markings
System	Nitrogen filled system
Capillary tube	Stainless steel
Immersion tube	Heat resistant steel
Standard dimension lengths “DL" in mm	135, 160, 250, 300, 400
Thread connection	Adjustable clamp screw
Size	½" BSP, ¾" BSP, other thread sizes upon request
Accuracy	Class 1.0, Limits of error acc. DIN EN 13190
Type	**Case configuration**
311	Wall bracket
321	Surface mounting
331	U-clamp for panel mounting

Type 331

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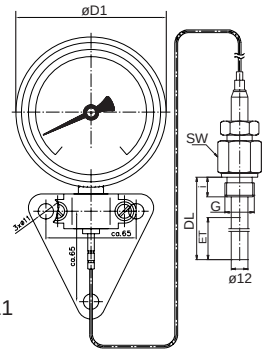
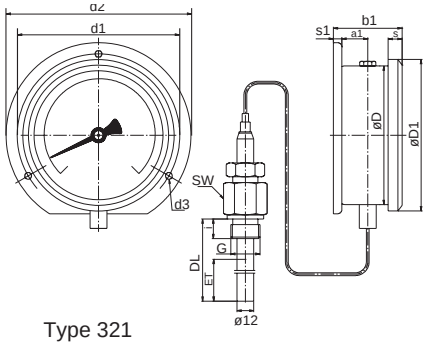
Dimensions (mm)

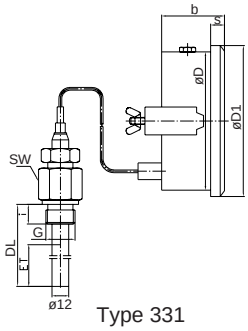
NG	a1	b1	D	D1	d1	d2	d3	s	s1
80	18	48	79	86	95	110	4,8	10	6
100	18,5	49	99	108	116	132	4,8	10	6



Type 311



Type 321



Type 331

Order Code for Type Z321

Mounting length DL	SIKA-Order-Code	ISSA- Code	IMPA-Code
Case dia 100 mm for surface mounting = Z321...			
135 mm, G½	...C2XX135922XX		
160 mm, G½	...C2XX160922XX		
200 mm, G½	...C2XX200922XX		
250 mm, G½	...C2XX250922XX		
300 mm, G½	...C2XX300922XX		
400 mm, G½	...C2XX400922XX		
135 mm, G¾	...C2XX135932XX		
160 mm, G¾	...C2XX160932XX		
200 mm, G¾	...C2XX200932XX		
250 mm, G¾	...C2XX250932XX		
300 mm, G¾	...C2XX300932XX		
400 mm, G¾	...C2XX400932XX		
XX = please order the capillary length			

Thermometer with wall bracket type 311
SIKA-Order-Code Z311C2XXXXXXXXXX case dia 100

Thermometer with U-clamp for panel mounting type 331
SIKA-Order-Code Z331C2XXXXXXXXXX case dia 100

Thermometer with rear flange for panel mounting type 321
SIKA-Order-Code Z321B2XXXXXXXXXX case dia 80

Thermometer with wall bracket type 311
SIKA-Order-Code Z311B2XXXXXXXXXX case dia 80

Thermometer with U-clamp for panel mounting type 331
SIKA-Order-Code Z331B2XXXXXXXXXX case dia 80

Order Example

for range 0 +120 °C
XXXXXX12XXXXXXXXXX

for range 0 +160 °C
XXXXXX16XXXXXXXXXX

for range 0 +250 °C
XXXXXX25XXXXXXXXXX

Note for ordering

When ordering standard types, please use order numbers. If changes, e.g. in range, immersion tube materials, stem lengths or connections are required, they have to be specified in your order.

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Electronic Digital Thermometers
SolarTemp / DiTemp

Displays suitabale for sensor elements Pt 1000

- Type of protection: IP 65
- Measuring range: 0-650 °C
  (0-600 °C, transmitter 4...20 mA)

SolarTemp with mounting plate

- Ambient temperature: -5 °C to +60 °C (case)
- Case: 170 x 150 mm,
  steel case blue powder-coated, aluminium mounting plate
- Power supply: Solar cell
- Min. light density: min. 50 Lux
- Digital display: 4 digit, 7 segment display, 25,4 mm high
- Approved by German Lloyd Certificate No. 58 698-08 HH

SIKA-Order-Code: 85065P54
85065P53360 (with transmitter)

DiTemp with rear flange

- Ambient temperature: -20 °C to +60 °C (case)
- Case: 80 mm dia. Bayonet case, stainless steel 1.4301
- Power supply: Lithium battery
- Service life: approx. 10 years
- Digital display: Dual display
  - analogue: bar graph 61 divisions
  - digital:4 digit, 7 segment display, 11 mm high
- Approved by German Lloyd Certificate No. 21 080-04 HH

SIKA-Order-Code: 92865P54
This products are also available in ISSA catalogue chapter 61.122...

SolarTemp type approval certificates

- GL
- ABS
- ClassNK Nippon
- DNV
- LR
- BV applied
- Korean R. applied

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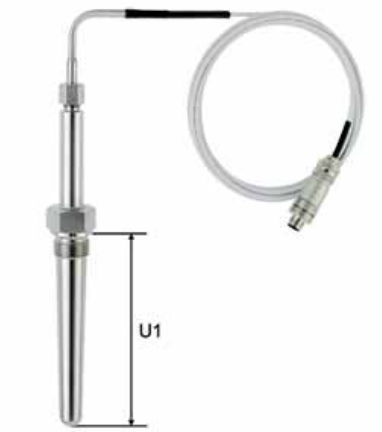
Sensors for 2-stroke and 4-stroke engines

Sensors for exhaust gas temperature with head form B (see drawing 430/0744*)

- Material: stainless steel 1.4571
- Fixed thread connection
- Max. temperature: 650 °C
- Exchangeable measuring inserts
- Approved by German Lloyd Certificate No. 20 916-04 HH

Diameter	Connection	Length U1	Type	Cable length
20 mm conical	G¾	200	Head B	-
17 mm conical	G¾	100, 160	Head B	-
14 mm conical	G½	100, 160, 200	Head B	-
Special teflon cable for connecting head form B to the display Length: 5 m; 10 m, 15 m				

Sensors for exhaust gas temperature with cable connection and extension tube (see drawing 430/1815*)



- Material: stainless steel 1.4571
- Fixed thread connection
- Max. temperature: 650 °C
- Exchangeable measuring inserts
- Approved by German Lloyd Certificate No. 20 916-04 HH

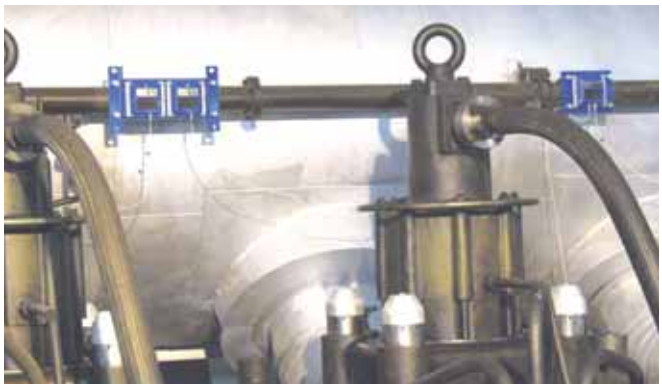
Diameter	Connection	Length U1	Type	Cable length
20 mm conical	G¾	200	straight or angular	1 m, 5 m 10 m, 15 m
17 mm conical	G¾	100, 160		
14 mm cylindric	G½	100, 160		

Order-Code

SIKA-Order-Code:
When ordering please specify the diameter, the connection type, the immersion tube length (100, 160, 200 mm), the type (other dimensions on request) and the connecting cable length (1 m, 2 m, ...) in your order.
This products are also available in ISSA catalogue chapter 61.122...

* please demand if required

SolarTemp applications



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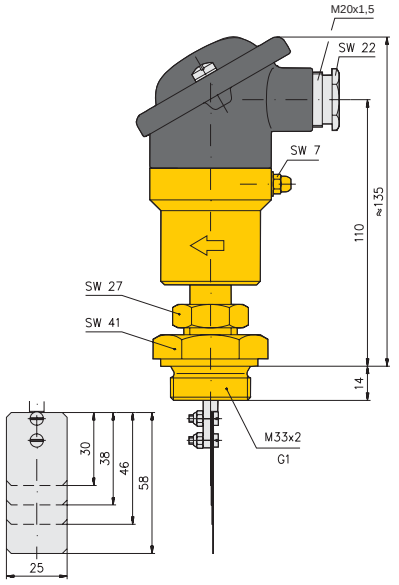
Paddle Flow Switches

Paddle flow switches, series VH 500 for liquids



- Suitable for water, oil, etc.
- Insert installation into pipes or pipe sections (Tees) DN 25...DN 50 or larger
- Four paddles in different sizes included, selection in accordance to the pipe size
- Robust construction
- Vibration proof to 4 g
- Wide set point ranges, universally applicable
- Setpoint adjustment by paddle size selection and by adjustment screw
- Micro switch with high contact rating
- Approved by German Lloyd, Certificate No.: 89 824-94 HH

Set point ranges and technical data

Size of pipe section	Paddle to select	Set point ranges H_2O bis 2 bar [m^3/h] *	
		ON	OFF
DN 25	25 x 30 mm	1,10 ... 1,25	1,05 ... 1,20
DN 32	25 x 38 mm	1,70 ... 2,05	1,60 ... 1,95
DN 40	25 x 46 mm	2,20 ... 2,55	2,10 ... 2,45
DN 50	25 x 58 mm	3,25 ... 3,85	3,15 ... 3,75

* Higher set points selectable by use of smaller paddle sizes.
Tolerance of the set point ranges: ± 15 %, set points for bigger pipe sizes on request

Technical data	
Max. pressure rating	6 bar
Max. test pressure	10 bar
Max. medium temperature	100 °C
Max. ambient temperature	85 °C
Change over contact, max. contact rating	24 VDC, 8 A resistance load, 7 A inductive load 60 VDC, 1 A resistance load 0,5 A inductive load 250 VAC, 10 A resistance load, 10 A inductive load
Protection class	IP 54
Material	Brass

Thread connection	Order code
1" BSP male	VH500NI3451R41
M 33x2 male	VH500NM3451M41

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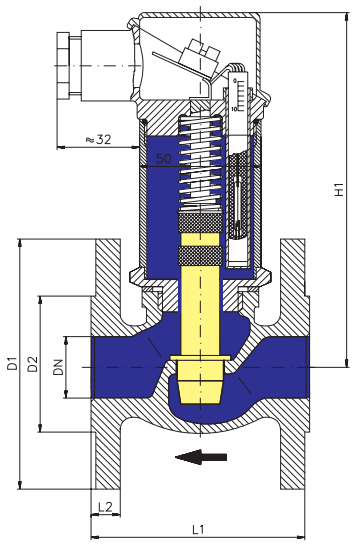
Flow Switches

Flow switches, piston type VM 100

- Inline installation
  DN 15...DN 20 female threaded
  DN 25...DN 80 flanged
- Wide set point range
- Various fitting positions
- High repeatability
- Reed contact output
- Special version for oil available
- Approved by German Lloyd,
  Certificate No.: 54 627 - 71 HH



Set point ranges and technical data

Type / order code *	Pipe size	Process connecton	Set point ranges at decreasing flow, H_2O, 20°C [l/min]	Dimensions [mm]				
				D_1	D_2	L_1	L_2	H_1
VM 115	DN 15	G 1/2	2...13	-	-	81	-	136
VM 120	DN 20	G 3/4	5...28	-	-	81	-	136
VM 125	DN 25	Flange drilled in accordance to DIN 2527	15...75	115	68	90	12	151
VM 132	DN 32		20...125	140	78	95	13	161
VM 140	DN 40		30...200	150	88	110	14	165
VM 150	DN 50		85...280	165	102	125	14	165
VM 165	DN 65		65...410	185	122	150	15	179
VM 180	DN 80		150...550	200	138	170	16	185

* If version suitable for oil is required, please indicate when ordering

Technical data	
Pressure rating	PN 16
Max. medium temperature	100 °C
Change over contact max. contact rating	24 VDC; 230 VAC 0,5 A (DC); 1 A (AC) 25 W; 36 VA
Cable gland	M24x1,5 acc. to DIN 89280
Protection class	IP 44
Hysteresis	< 15 % of set point range
Accuracy	< 2 % of set point range

Materials	
Pipe section	Gun metal RG 5
Upper section	Brass
Piston	PPN Hostalen
Magnet	Hard ferrite

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Positive Displacement Flow Sensors

Positive displacement flow sensors, series VZ...S

- Highly accurate transmitters that measure volume flows of viscous liquids such as oil
- 7 different component sizes available
- Viscosity range: 1...100.000 mm²/s
- Various housing and seal materials provide a universal applicability with different measurement media
- Standard process connection via subplates, i.e. quickly exchangeable without longer process stops
- Flow proportional frequency output signal

Common technical data for all sizes

	VZ...GG-S	VZ...VA-S
Measuring accuracy	±0,3 % of measured value (at 21 mm²/s)	
Repeatability	0,05 % for same conditions	
Operating pressure	VZ 0,025... to VZ 1... 400 bar VZ 3... to VZ 5... 315 bar higher pressure rating on request	
Temperature range	-30 °C ... +120 °C -30 °C ... +150 °C with thermally insulated preamplifier -30 °C ... +80 °C for Ex version	
Material - housing - gear wheels - ball bearing	cast iron GGG 40 steel 1.7139 100CR6 / 1.3505	stainless steel 1.4404 stainless steel 1.4462 X105CrMo17 / 1.4125
Seal material	Standard: FPM (VITON) Option: EPDM, FEP	
Process connection	via subplate with lateral female thread connection	
Subplate material	cast iron GGG 40	stainless steel 1.4404
Power supply	12...30 VDC / max. 90 mA	
Electrical connection	via standard socket	
Protection class	IP 65	
Output signal	2-channel, square wave, keying ratio 1:1, PNP	

Special technical data

Size	Start of gear wheel rotation [l/min]	Measuring range* [l/min]	Measuring volume [cm³/pulse]	Resolution [pulses/l]
VZ 0,025-S	0,001	0,008...2	0,025	40 000
VZ 0,04-S	0,004	0,02...4	0,04	25 000
VZ 0,2-S	0,01	0,16...16	0,245	4 081,63
VZ 0,4-S	0,01	0,2...40	0,4	2 500
VZ 1-S	0,02	0,4...80	1,036	965,25
VZ 3-S	0,03	0,6...160	3,000	333,33
VZ 5-S	0,04	1...250	5,222	191,50

* For media with high viscosity the measuring range is reduced.
The max. pressure drop shouldn't exceeded 16 bar (asked for pressure drop diagrams).

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Oval Wheel Flow Meters

Oval wheel flow meters, series VO

- The meters are positive displacement flow meters, oval wheel types
- Measuring the volume flow rate of liquids and liquefied gases
- Developed for the measuring of small flow rates and total flows
- The modular design can be adapted to a wide field of applications
- Very robust design
- High flexibility and adaptability
- High accuracy
- Low installation costs

Oval wheel flow meter applications

Lubricating oil consumption measurement, reliable and economic.

Technical data

Measuring accuracy (Viscosity >3 mPas)	< ±1 % of measured value without calibration < ±0.5 % of measured value with calibration
Repeatability	0,1 % of measured value
Operating temperature	-10 °C ... +70 °C
Nominal pressure	PN 40
Material - housing - oval wheels	Stainless steel, aluminium Stainless steel, PPS
Power supply	With batterie (life-cycle 5 years) or 10...24 VDC
Protection class	IP 67 (blind design) IP 65 (local display)
Output signal	LC display or / and pulses, NPN/PNP open collector or NAMUR

Process connection and measuring range

Type	Process connection	Measuring range [l/min]
VO 03	½" BSP female thread	0.2...2
VO 06	½" BSP female thread	0.5...5
VO 1	½" BSP female thread	1...10
VO 5	1" BSP female thread	5...50
VO 10	1" BSP female thread	10...100

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Turbine Flow Sensors

Turbine flow sensors, series VTR

- For different liquids, such as water and other low viscosity liquids
- Very robust and for most severe conditions
- Consists of the measuring turbine (wide range of sizes) and the pick-up mounted on top (five different types available)
- Determine precisely, dependably and easily the flow
- Flow proportional frequency output signal

Technical data and materials of turbine

Technical data	
Linearity	± 0,5 % of measured value
Repeatability	± 0,05 % of measured value
Response time	< 50 ms up to DN 40; > 50 ms up to DN 300
Process- connections	Flange: DIN, ANSI, others on request, thread (up to DN 50 only): BSP (ISO 228) or NPT male thread
Pressure drop	280 mbar at 100% measurement range (density 1, viscosity 1 mm²/s)
Minimum pressure	2 x pressure drop of sensor
Maximum pressure	Threaded connection: 250 bar Flanged connection: corresponding to flange specification
Mediums temp.	Max. 150 °C
All figures specified apply to viscosities up to 5 cSt. Higher viscosities on request.	

Materials	
Turbine body	AISI 316 stainless steel
Flange	AISI 105 carbon steel or AISI 316 stainless steel
Rotor	up to VTR 1020: stainless steel (18 % Cr 2 % Mo) VTR 1025-1200: stainless steel (20 % Cr 2 % Mo)
Bearing support	AISI 316 stainless steel
Rotor bearing	Tungsten carbide sleeve bearing, others (e.g. ball bearings) on request
Pick-up	VISPP: AISI 314 stainless steel VISPP-HT: AISI 316 stainless steel VSAPPS / VSAPPSHT: brass nickel-plated

Measuring turbine sizes and flow ranges

Type	**Size**	**Flow range [m^3/h]**	**Flow range [l/min]**
VTR 1010	DN 10	0,11...1,1	1,8...18,3
VTR 1015-S	DN 15	0,22...2,2	3,7...36,7
VTR 1015	DN 15	0,4...4	6,7...66,7
VTR 1020	DN 20	0,8...8	13,3...133
VTR 1025	DN 25	1,6...16	26,7...267
VTR 1040	DN 40	3,4...34	56,7...567
VTR 1050	DN 50	6,8...68	113...1133
VTR 1075	DN 75	13,5...135	225...2250
VTR 1100	DN 100	27...270	450...4500
VTR 1150	DN 150	55...550	917...9167
VTR 1200	DN 200	110...1100	1833...18333
VTR 1250	DN 250	190...1900	3173...31730
VTR 1300	DN 300	270...2700	4509...45090

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Portable Ultrasonic Flow Meters

SIKA® founded 1901
Dr. Siebert & Kühn GmbH & Co. KG

Portable ultrasonic flow meters clamp-on type, series VC

- Non-invasive measurement using a clamp-on method for precise bi-directional, highly dynamic flow measurement
- New portable, easy-to-use flowmeter with 2 flow measurement channels, multiple inputs/outputs, an integrated data logger and a serial interface in the standard version
- Automatic loading of calibration data and transducer detection, reduces set-up times and provides precise, long-term stable results
- Li-Ion battery for 14 hours of measurement operation
- Proven clamp-on method; transducers are available for a wide range of rated diameters from DN 6 to DN 6500 and temperatures from -40...+400 °C
- Integrated wall thickness measurement
- Water and dust-tight; resistant against oil, many liquids and dirt
- Robust, water-tight (IP 67) transport case with comprehensive accessories
- HybridTrek: automatic changeover between transit time difference method and NoiseTrek for media with a high proportion of solids or gases
- QuickFix for fast mounting of the flowmeter in difficult conditions

Ultrasonic flow meter applications

For non-invasive flow measurement at different pipe materials and for a wide variety of liquids.

Technical data

Flow velocity	0.01...25 m/s
Repeatability	0.15 % of reading ±0.01 m/s
Accuracy[1)]	With standard calibration ±1.6 % of reading ±0.01 m/s Others on request
Medium	All acoustically conductive liquids with < 10 % gaseous or solid content in volume (transit time difference principle)
Operating temperature	-10...+60 °C
Power supply	100...230 V / 50...60 Hz (power supply), 10.5...15 VDC (socket at flowmeter) or Battery Li-Ion, 7.2 V/4.5 Ah, operating time (without outputs, inputs and backlight): > 14 h
Protection class	IP 65
Material	Polyamid
Weight	1.9 kg

[1)] for transit time difference principle, reference conditions and v > 0.15 m/s

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Temperature Sensors

Temperature sensors for marine applications

The marine area is a special field. Standard temperature sensors cannot be used due to extreme mechanical stress. For example, there are acceleration forces of more than 200 g, if the temperature sensor is directly installed on marine engines.

Most of all, the sensors used in marine application must sustainably absorb such forces. Which means, during manufacture to special requirements are demanded to avoid the breakdown of the measurement system. Thus the internal structure of the temperature sensor is designed as a vibration resistant component. Continuous quality controls and numerous tests directly fitted to marine engines guarantee a high life expectancy.

SIKA has long-term experiences in the area of marine sensors used under extreme conditions in marine application.

We manufacture special versions of temperature sensors to customer specific requirements also in this marine area.

Important calibration instructions

A periodic calibration of your temperature sensors is required to make sure that they display always a correct temperature value. We provide you with the relevant calibration tools.

SIKA temperature sensors...

- for exhaust gas measurement on combustion engines
- for exhaust gas temperature measurement
- for cooling water temperature measurement
- for oil and water temperature measurement
- for exhaust gas measurement, conical
- with Cable Socket, angle type DIN EN 175 301-803 form A

- Accuracy : class B, class 2
- Max. temperature: 600°C
- Type of protection: IP 54, IP 65
- Authorization: approved by German Lloyd

Temperature sensor approval certificates

- GL
- ABS
- ClassNK Nippon
- DNV
- LRS
- BV
- RINA

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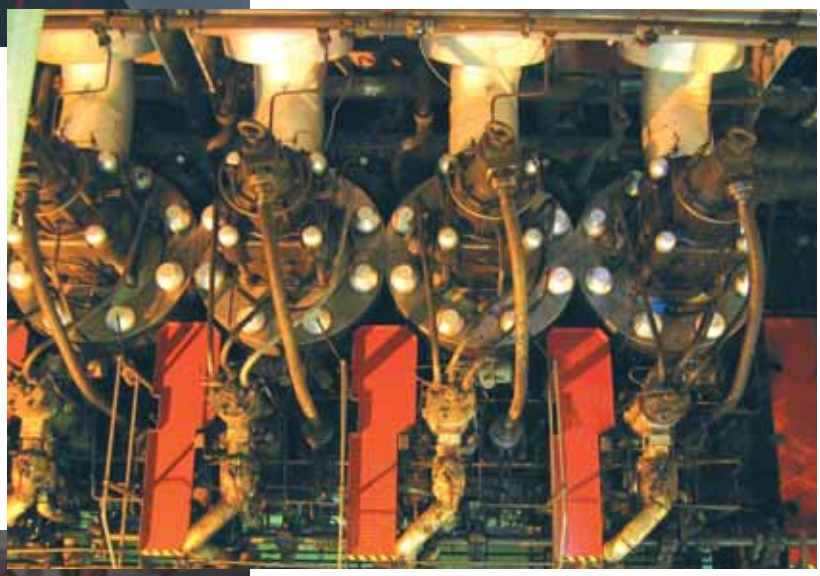
Temperature sensor applications



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Display and Monitoring System

Centralised data collection with EB 2000 and EB 3000

- The EB system is not a new version of field bus, but a deliberate, well-priced concept that allows an easy handling of a high number of measuring points
- Easy assembly by means of polarity-free 2-wire system in bus, star or tree design
- Up to 240 sensors can be connected for a centralised data collection.
- The digital bus permits a bidirectional exchange of information.
- Bus length up to approx. 1000 m
- Connection is made polarity-free and short-circuit proof
- Sensor module supply via bus cable or externally
- Interface supply always via bus cable
- All bus functions are maintained even in case of sensor module failure.
- A fully automatic start-up installation via software is possible.
- Any new sensor module will be automatically detected.
- During operation sensor modules may be changed, removed or added.
- Scan time approx. 55 ms for each sensor module
- CRC check ensures very high transmission reliability.

Application area

- Wherever more than one sensor is required for measuring, controlling, monitoring or recording
- Special application areas like heat sensitive bulk materials for example rice, cereal, carbon and wood.

Technical data

Type	**EB 2000**	**EB 3000**
Inputs	9	20 + 2 virtual channels
Display	4-digit, 7-segment LED, 13 mm high, red -1999...9999 digit dependent on connected sensor	
Channel display	9 LED	2-digit, 7-segment LED, 7 mm high, red
Status display	7 LED	11 LED
Relay output	2 2 x SPST, 10 A / 3 A / 250 VAC	5 4 x SPST, 5 A / 2 A / 250 VAC 1 x SPDT, 5 A / 2 A / 250 VAC
Serial interface	RS232	EB interface
Protection class	IP65	
Dimensions	96 x 48 x 100 mm	
Power supply	230 VAC, 50/60 Hz 115 VAC, 50/60 Hz (Optional) 24 VAC, 50/60 Hz (Optional) 12 VAC, 50/60 Hz (Optional)	
SIKA-Order-Code	EME8EB20000000	EME8EB30000000

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Sensor modules for temperatur

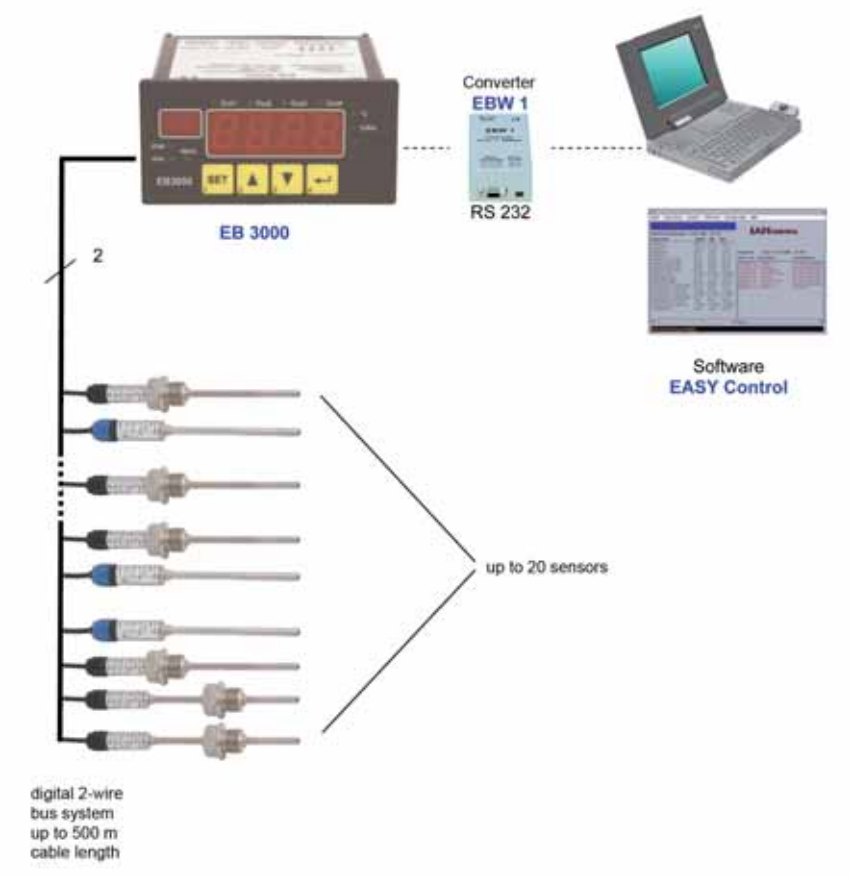
Sensor type	Pt 1000 / 2-wire, potential-free
Temperature range	-30.0...100.0 °C Standard -70.0...400.0 °C with extension tube (option -200.0 °C...500.0 °C)
Accuracy	±0.2 % of reading + 0.2 °C
Cable	PVC, length 1 m
Immersion tube material	Stainless steel 1.4571
SIKA-Order-Code	
Type EBT-IF1	EME8EBTIF10000
Type EBT-IF2	EME8EBTIF20000
Type EBT-IF3	EME8EBTIF30000

Type EBT-IF1 (Standard, D = 6 mm, L = 100 mm)

Type EBT-IF2 (Standard, D = 6 mm, L = 100 mm, G½", without extension tube)

Type EBT-IF3 (Standard, D = 6 mm, L = 50 mm, G½", with extension tube 100 mm)

Application example of display and monitoring system



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Measuring and Monitoring Instruments

Temperature measuring devices with 2 light-reflex buttons, series TS 31000

The instruments of the series TS 31000 are 16- or 32-channel temperature measuring instruments for thermocouples.

The TS 31000 is operated and programmed contactless via 2 light reflecting buttons.

The customer specific pre-configuration for 16 applications (e.g. engine types) offers a wide field of use.

The TS 31000 is equipped with a microcontroller for the complete control as well as for the linearization of the different types of thermocouples and the cold junction sensors.

The measured temperature of the selected measuring point is shown on an easy reading 4-digit LED display. The customer specific text of the selected measuring point is indicated on a 2 line LCD matrix display.

The sensors are connected to the TS 31000 by the two 20-pole plug connectors or by 16-channel interchange modules with flat strip line.

Technical data

Interchange module for 16 channels with 32 srewclamps (sensor inputs). Output: 20 pole plug connector (picture similar)

Number of measuring inputs	32
Channel selector	Electronic switch
Inputs	TC Type K, E, J, T, S, B or R
Display	Measured value display: 4 digit LED text display: 2-line alphanumeric LCD
Supply voltage	DC 12V or 24V AC 250, 230, 115 or 24V (external power supply unit)
Housing	96 x 96 x 75

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SIKA Test and Calibration Equipment...

...with all you need for a perfect measuring and calibration

Hand Held Devices, series MH

The handy and reliable instruments are used for measurement and recording of temperature and pressure.
The MH series is very flexible and is suitable for both simple measurements and special applications.

Non-contact infrared thermometers

In any area of non contact temperature measurement, SIKA infrared-thermometers are reliable partners due to the following features: fully developed laser sight technology, very good optical characteristics, and modern technology with adjustable emissivity, data memory, and numerous additional functions.

Simulators

The simulators are portable calibrators able to measure and to generate on 1 cannel (UC series) or simultaneously on 2 isolated channels (MC series) voltage, current, frequency, resistance signals as also resistive probes and thermo couples signals as also thermo couple probes.

Thermal view TI 10 M / TI 25 M

Designed for marine applications. Simply scroll through the different viewing modes quickly to better identify trouble areas in Full IR thermal, picture-in-picture, or automatic blend visual and thermal images.

Pressure calibrators PM... and PC...

Pneumatic and hydraulic pressure calibrators describe themselves especially by high accuracy of measurement and compact type of construction.

Reference pressures of -1 up to 700 bar can be generated in a fast and simple way.

Temperature calibrators TP 17 000 M

Regular inspection of the temperature sensors used in the machine and ship applications is absolutely essential for economic and technical safety.

Our service temperature calibrators cover temperature of -35 °C up to +650 °C.

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Hand Held Devices

Measuring devices for temperature and pressure, series MH

The handy and reliable instruments of the MH series are used for measurement and recording of temperature and pressure. The MH series is very flexible and is suitable for both, simple measurements and special applications.
High-performance sensors with electronic linearization of the characteristic provide high accuracy during signal recognition and processing. Matching sensors are available for extensive measurement jobs.

MH 175, for temperature with plug-in sensors

Measurement input: (mini-DIN socket)		1 x Pt 1000 / 2 wire	
Measurement range / resolution		-70,0...199,9 °C / 0,1 °C	
Accuracy		±0,1 % of rdg. ±1 digit	
Measuring range	**SIKA-Order-Code**	**ISSA-Code**	**IMPA-Code**
up to 200,0 °C	EME8GMH1750000	61.176.01	6517...

MH 3750, for temperature with plug-in sensors

Measurement input: (mini-DIN socket)		1 x Pt 100 / 4 wire	
Measurement range / resolution		-199,99...199,99 °C / 0,01 °C 200,0...850,0 °C / 0,1 °C	
Accuracy		± 0,015 % FS ±1 digit	
Measuring range	**SIKA-Order-Code**	**ISSA-Code**	**IMPA-Code**
up to 850,0 °C	EME8GMH3750000	61.176.02	6517...

MH 3250, for temperature with plug-in sensors

Measurement input: (mini-DIN socket)		2 x Type K, J, N, S, T	
Measurement range / resolution		-199.9...999.9°C / 0.1°C -220...1370°C / 1°C	
Accuracy		±0.1 % of rdg. ±0.1 % FS ±1 digit	
Measuring range	**SIKA-Order-Code**	**ISSA-Code**	**IMPA-Code**
up to 1150 °C	EME8GMH3250000	61.176.03	651752/53

MH 3160, for pressure internal piezo-resistive sensor

Direct pressure input (6 mm fitting) for		air and non-corrosive/ionizing gases and liquids	
Measurement range / resolution		-1999...9999 digit / sensor dependent	
Accuracy		±0.2 % FS ±1 digit	
Pressure range	**SIKA-Order-Code**	**ISSA-Code**	**IMPA-Code**
-1...25 mbar (rel.)	EME8GMH316001	61.242.02	
-10...350 mbar (rel.)	EME8GMH316007	61.242.03	
0...1300 mbar (abs.)	EME8GMH316012	61.242.04	
-100...2000 mbar (rel.)	EME8GMH316013	61.242.05	

MH 3156, for pressure with plug-in sensors made of st.st for aggressive mediums

Measurement inputs (mini-DIN socket)		2 x pressure sensor MSD	
Measurement range / resolution		-19999...19999 digit / sensor dependent	
Accuracy		±0.1 % FS ±1 digit	
Pressure range	**SIKA-Order-Code**	**ISSA-Code**	**IMPA-Code**
	EME8GMH3155000	61.242.10	

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Temperature and pressure sensors

Pt 1000 measurement sensor for MH 175 Range: -70...200 °C, L = 100 mm, D = 3 mm

	SIKA-Order-Code	ISSA-Code	IMPA-Code
Standard sensor GTF 175 (Fig. 1)	EME8GTF175000G	61.178.01	6517...
Spike sensor GES 175 (Fig. 2)	EME8GES175000G	61.178.02	6517...
Surface sensor GOF 175, head = 4 mm (Fig. 3)	EME8GOF175000G	61.178.03	6517...
Air/gas sensor GLF 175, head = 6 mm (Fig. 6)	EME8GLF175000G	61.178.04	6517...

Pt 100 measurement sensor for MH 3750 Range: -50...400 °C, L = 150 mm, D = 3 mm

	SIKA-Order-Code	ISSA-Code	IMPA-Code
Standard sensor GTF 401 (Fig. 1)	EME8GTF401000G	61.178.10	6517...
Spike sensor GES 401 (Fig. 2)	EME8GES401000G	61.178.11	6517...
Surface sensor GOF 401, head = 4 mm (Fig. 3)	EME8GOF401000G	61.178.12	6517...
Air/gas sensor GLF 401, head = 6 mm (Fig. 6)	EME8GLF401000G	61.178.13	6517...

NiCr-Ni measurement sensor for MH 3250

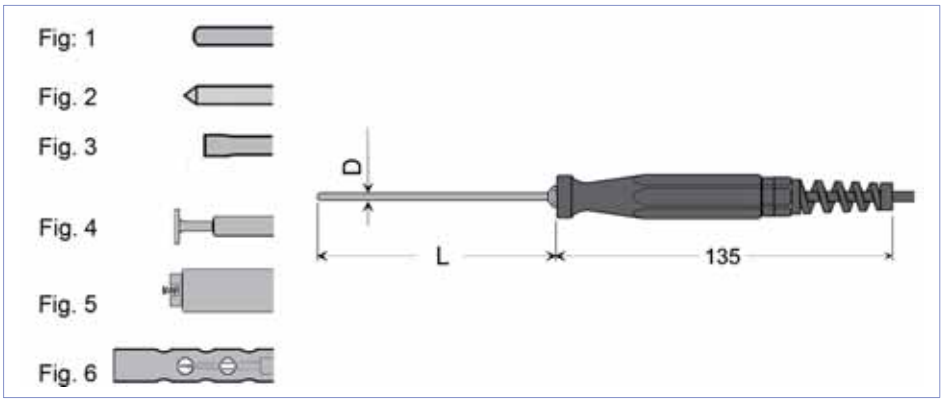
	Range	L [mm]	D [mm]	SIKA-Order-Code	ISSA-Code	IMPA-Code
Standard sensor GTF 900 (Fig. 1)	-65...1000 °C	130	3	EME8GTF900000G	61.178.15	651771
Spike sensor GES 900 (Fig. 2)	-65...1000 °C	130	3	EME8GES900000G	61.178.16	6517...
Inconel sensor GTF 1200/300 (Fig. 1)	-65...1150 °C	300	3	EME8GTF120030G	61.178.20	6517...
Surface sensor GOF 130 CU (Fig. 4)	-65...500 °C	130	3 (head = 4)	EME8GOF130CU0G	61.178.30	6517...
Surface sensor GOF 130 (Fig. 5)	-65...900 °C	130	8	EME8GOF130000G	61.178.35	6517...
Air/gas sensor GLF 130 (Fig. 6)	-65...600 °C	130	3 (head = 6)	EME8GLF130000G	61.178.40	6517...

Piezo-resistive pressure sensor for agressive media

PVC cable (1 m) with mini-DIN plug, fitting: st.st. G1/4" A, casing: st.st. IP65

Pressure range	SIKA-Order-Code	ISSA-Code	IMPA-Code
1 bar	EME8GMSD001BAE	61.242.11	
7 bar	EME8GMSD007BAE	61.242.12	
35 bar	EME8GMSD035BAE	61.242.15	
160 bar	EME8GMSD160BAE	61.242.16	
250 bar	EME8GMSD250BAE	61.242.17	
400 bar	EME8GMSD400BAE	61.242.18	

Temperature sensors



Pressure sensor

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Infrared-Temperature Hand Held Measurements

Non-contact infrared thermometers

When it comes to measurement of dangerous matter (e.g. electrically life parts, chemically aggressive materials etc.) and inaccessible locations then infrared-thermometers will be the first choice.

In any area of non contact temperature measurement, SIKA infrared-thermometers are reliable partners due to the following features: fully developed laser sight technology, very good optical characteristics, and modern technology with adjustable emissivity, data memory, and numerous additional functions.

SemiTemp 2030 B2

Measuring range	-32...535 °C
Optical resolution	16/1 (distance/spot)
Accuracy	±1 % of reading or ±3 °C
Dimensions / weight	Approx. 195 x 135 x 40 mm / 320 g

Range	SIKA-Order-Code	ISSA-Code	IMPA-Code
up to 535°C	EME8RAYST250EU	61.175.05	

SemiTemp 6080 A1/B1

Measuring range	-32...600 °C (A1) -32...760°C (B1)
Optical resolution	30/1 (distance/spot) (A1) 50/1 (distance/spot) (B1)
Accuracy	±1 % of reading or ±3 °C
Dimensions / weight	approx. 195 x 135 x 40 mm / 320 g

Range	SIKA-Order-Code	ISSA-Code	IMPA-Code
up to 600 °C	EME8RAYST60BEU	61.175.10	
up to 760 °C	EME8RAYST80BEU	61.175.12	

MaxiTemp 24 A3

Measuring range	-30...900 °C
Optical resolution	60/1 (distance/spot)
Accuracy	±1 % of reading or ±2 °C
Dimensions / weight	approx.200 x 170 x 50 mm / 480 g
EXI	Option

Range	SIKA-Order-Code	ISSA-Code	IMPA-Code
up to 900 °C	EME8RAYMX2TD00	61.175.15	65 18 06

PhotoTemp

like MaxiTemp 24 A3, but additional integrated digital camera

Measuring range	-30...900 °C
Optical resolution	60/1 (distance/spot)
Accuracy	±0.75 % of reading or ±1 °C
Dimensions / weight	approx.200 x 230 x 50 mm / 480 g

Range	SIKA-Order-Code	ISSA-Code	IMPA-Code
up to 900 °C	EME8RAYMX6TDU0		

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Thermal view TI 10 M and TI 25 M combine a thermal image with the visual image

Designed for marine applications, the TI 10 M / TI 25 M puts the capabilities of thermal imaging within the hands of service and maintenance personnel who know the facility and equipment best.

Simply scroll through the different viewing modes quickly to better identify trouble areas in full IR thermal, picture-in-picture, or automatic blend visual and thermal images.

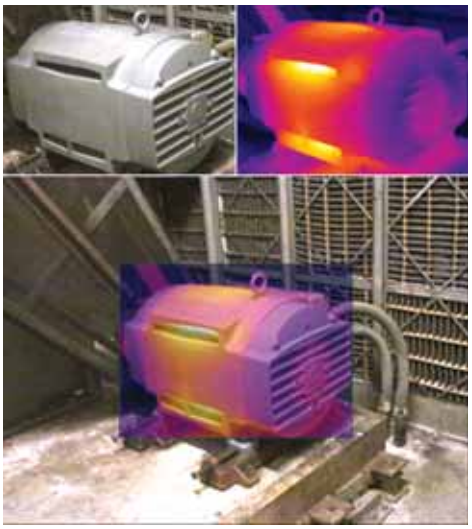
Ancillary lens for TI 25 M doubles the measuring range up to 700 °C

With our ancillary lense it is possible to double the measuring range of the TI 25 M. The indicated temperatures must be multiplicated by 2.

Types	TI 10 M	TI 25 M
Measuring range	-20 °C...+250 °C	-20 °C...+350 °C
Optical resolution	390/1	390/1
Accuracy	±5 °C or ±5 % of reading (higher one is valid)	±2 °C or ±2 % of reading (higher one is valid)
Storage medium	2 GB SD-memory card will store 3000 basic (.bmp) IR images or 1200 fully radiometric (.is2) IR images.	
Software	SmartView™ full analysis and reporting software included	
Dimensions / weight	267 x 127 x 152 mm / 1,2 kg	

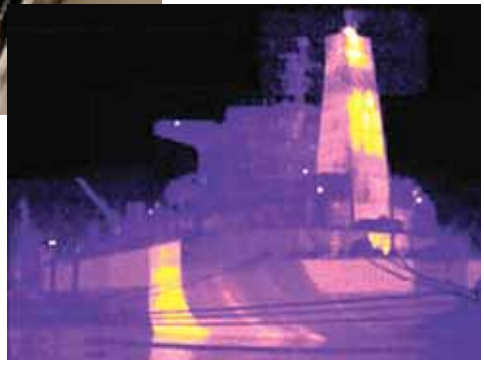
Type	SIKA-Order-Code	ISSA-Code	IMPA-Code
TI 10 M	EME8RAYTVTI100		
TI 25 M	EME8RAYTVTI250		
Ancillary lens for TI 25 M	EME8RAYTVTI25VL		

Some typical application areas of the TI 10 M / TI 25 M



Electro-mechanical equipment:
Like motors, pumps, bearing and gear boxes.

Process instrumentation:
Like process control equipment, pipes, valves, steam traps and vessels



Facility maintenance: Like HVAC systems, buildings and roofs

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Temperature Calibrators

SOLAS ISM regulation

In 1998, the International Safety Management (ISM) code was adopted by IMO and became mandatory on certain ocean going vessels.
In 2002 the Safety Of Life At Sea (SOLAS), Chapter IX and the ISM code applies to all ships.

Our calibration equipment (temperature calibrators and pressure calibrators) will enable ship owners and marine engineers to comply with the SOLAS regulation for maintenance standards.
We advice a recalibration with a circle between 1 and 3 years dependents on loading.

The recalibration comprises:

- Documentation of the actual state with input certificate
- Calibrator adjustment (only made by SIKA DKD laboratory) with output certificate

Temperature calibrators, TP 17 000 M

Exact temperature measurement and monitoring are “musts” for operational safety of machinery and ships. Regular inspection of the temperature sensors used in these applications is absolutely essential for economic and technical safety reasons and is already prescribed as obligatory in many sectors.

The SIKA service temperature calibrators are approved for use on the sea-going ships, domestic vessels and in the offshore area.

The calibrators of series TP 17 000 M contains an electronically controlled metal block with a bore for the reception of the device under test. Adapter sleeves are used for device under test with smaller diameter. The block is mounted in a heat isulated housing .

The complete electronic is located in the front of the calibrator. The required temperature of the block is easily set on the digital controller.

The current block temperature will automatically adjusted to the set value. Block temperature and set temperature are constantly shown on the 2-line, 4-digit, 7-segment LED display.

Adapter sleeves are used for sensors under test with smaller diameter.

SIKA service calibrators for testing of:

- Thermometers / SIKA industrial thermometers
- Temperature switches / thermostats
- Resistance thermometers / thermocouples

Technical data

Device type	**TP 17 165 M**	**TP 17 650 M**
Temperature range	-35 up to +165 °C	Ambient temperature up to +650 °C
Block temperature control	Digital PID controller, automatic fine adjustment with softstart for fan	
Block temperature display	4-digit, 2-line,7-segment LED, 7 mm high, red and green	
Display resolution	1 °C	
Power supply	90...240 VAC, 50/60 Hz	230 VAC, ±10 %, 50/60 Hz (Option 115 VAC, ±10 %, 50/60 Hz)
Block hole / Block depth	28 mm / 150 mm	
Dimensions (mm) / weight (kg)	Approx. 210 x 380+70 x 270 / approx. 7,5	Approx. 150 x 330+70 x 270 / approx. 7,5

Calibrator type	**SIKA-Order-Code**	**ISSA-Code**	**IMPA-Code**
TP 17 165 M, -30 to +165 °C,	EP17165M281500	61.187.01	65 25 03
TP 17 650 M, ambient to +650 °C,	EP17650M281500	61.187.21	65 25 05

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Simulators

Universal pocket calibrator, series UC

Digital, menu driven value adjustment, 6 keys and navigator
Background-lit, graphic LC-display, 160 x 160 pixel
Step-, ramp-, cycle-, HOLD- and scaling functions
Serial USB PC interface (type mini B)
Power supply via 4 x 1.5V batteries (AA type)
Dimensions approx. 160 x 85 x 45 mm / weight approx. 300 g

Types	UC RTD	UC TC	UC mAV
Signals	RTD: Pt50, Pt100, Pt200, Pt500 Pt1000, Ni100, Ni120, Ni1000, Cu10, Cu50 Ω: Resistance 0…400 Ω, 0...4000 Ω	TC: Types J, K, T, R, S, B, C, U, L, N, E mV: Voltage 0...100 mV	mA: Current 0(4)…20 mA, 25 mA V: Voltage 0…10 V, 25 V, 50 V
Features	Data logging function via flash memory for 10.000 measured values Graphic and tabular display of measured values		Incl. 2 x test cable , 2 x test clip
Accuracy	±0.012 % of rdg. +K	±0.020 % of rdg. +K	±0.015 % of rdg. +K
Resolution	0.01 °C or 0.01 °F and 1...10 mΩ	0.1° C or 0.1 °F and 1 µV	0,1 mA or 0,1 V

Type	SIKA-Order-Code	ISSA-Code	IMPA-Code
UC RTD	EME8A0UCRTD000		
UC TC	EME8A0UC0TC000		

Universal multifunction calibrator, series MC

Digital, menu driven value adjustment, 22 keys and navigator
Background-lit, graphic LC-display, 240 x 320 pixel
Step-, ramp-, cycle-, HOLD- and scaling functions
Serial USB PC interface (type mini B)
Power supply via internal accumulator incl. power pack (230 VAC)
Dimensions approx. 210 x 110 x 50 mm / weight approx. 900 g

Signals (TC) Types J / K / T / R / S / B / C / U / L / N / E
(RTD) Pt50 / Pt100 / Pt200 / Pt500 / Pt1000
Ni100 / Ni120 / Ni1000 / Cu10 / Cu50
(Ω) Resistance 0…400 Ω / 0…4000 Ω
(mA) Current 0(4)…20mA, 25 mA
(mV) Voltage 0...100 mV
(V) Voltage 0…10 V, 25 V, 50 V
(Hz) Frequency 1...20 kHz

Data logging function via flash memory for 10.000 measured values.Graphic and tabular display of measured values. (only for MC 75)

Types	MC 50	MC 75
Accuracy	±0.017 % of rdg. +K	±0.014 % of rdg. +K
Resolution	6 digits	6 digits

Type	SIKA-Order-Code	ISSA-Code	IMPA-Code
MC 50	EME8A0MC050000		
MC 75	EME8A0MC075000		

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Pressure Calibrators

Precision pressure calibrator, series PM...

Pneumatic and hydraulic pressure calibrators of series PM... describe themselves especially by high accuracy of measurement and compact type of construction.

Reference pressures of -1 up to 700 bar can be generated in a fast and simple way.

Exact adjustment of the desired pressure is carried out by a precision adjustment valve. The reference pressure is indicated via an analogue precision pressure gauge or a digital LCD. The instruments under test are connected to the pressure output of the calibrators by a pressure hose and an adapter. For rough use on the spot the calibrators can be supplied in protection class IP 68. Power is supplied by batteries or rechargable accumulators.

The automatic measuring range switch of the PM... series grants an optimal resolution with any application. Different measurement units can be selected by pressing a function key.

Precision pressure calibrator PM 40

Pressure media: air
Pressure range of handpump: -1...40 bar

Type	PM 40 E	PM 40 D
Display	Multifunction LCD 30 x 30 mm	Multifunction LCD 30 x 30 mm
Pressure range	-1...40 bar	-1...3 bar -1...40 bar
Tolerance	±0.5 % FS ±1 digit	±0.10 % FS ±1 digit

PM 40 E	SIKA-Order-Code	ISSA-Code	IMPA-Code
-1...40 bar	PM040E00053000		

PM 40 D	SIKA-Order-Code	ISSA-Code	IMPA-Code
-1...3 bar	PM040D00000300	61.241.10	
-1...40 bar	PM040D00053000	61.241.11	

Included accessoires: Pump and pressure hose, nylon seal and case
Set of adapter: G1/8", G3/8", G1/2", reference reduction G1/4" double fitting G1/8'' and G1/4''

Precision pressure calibrator PM 700

Pressure media: water and oil
Pressure range of handpump: 0...400 bar (distilled water)
0...700 bar (spec. hydraulic oil)

Type	PM 700 E	PM 700 D
Display	Multifunction LCD 30 x 30 mm	Multifunction LCD 30 x 30 mm
Pressure range	0...300 bar	0...350 bar 0...700 bar
Tolerance	±0.5 % FS ±1 digit	±0.1 % FS ±1 digit

Type	SIKA-Order-Code	ISSA-Code	IMPA-Code
PM 700 E	PM700E-3000000		
PM 700 D, 0...350 bar	PM700D-3000000	61.241.17	
PM 700 D, 0...700 bar	PM700D-7000000		

Included accessoires: Pump and pressure hose, nylon seal and case
Set of adapter: G1/8", G3/8", G1/2", reference reduction G1/4'' double fitting G1/8'' and G1/4'' as well as NPT 1/4''

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High Pressure Calibration Set

High pressure calibration set P-HP

With the calibration set P-HP you are able to check your mobile hydraulic power units (1) or fuel-injector test rigs (2). These pneumatically supported high pressure pump systems can be equipped with different tools and are used on board for following operations:

- Setting of injection valves
- Assembling / disassembling cylinder cover
- Fixing fundament
- Creation defined torques

The calibration of build-in pressure gauges allow a reliable statement about the accuracy and is therefore decisive to the quality of proceed operations.
The connection of digital pressure reference P-HP will be via hose adapter to the pressure output of the controlling system.
The high pressure calibration set P-HP includes the pressure reference with connection adapter as well as three high pressure hose and will be supplied in a service case.

High pressure calibration set applications

Hydraulic power unit e.g. IOPmarine (1)

Fuel-injector test rig e.g. IOPmarine (2)

Technical data

Pressure media: special hydraulic oil

Display	Multifunction LCD 20 x 60 mm
Pressure range	0...2000 bar
Tolerance	±0.1 % FS ± 1 digit

Pressure range	SIKA-Order-Code	ISSA-Code	IMPA-Code
0...2000 bar	EME8AEB23HP2K0		

Included accessoires:
- Case
- Adapter with quick coupling nipple 2000 bar (male)
- Different high pressure hoses (0.3 m) with quick coupling
  1 x red, 2000 bar, female
  1 x blue, 1500 bar, female
  1 x blue, 1500 bar, male

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Subject to technical modification

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