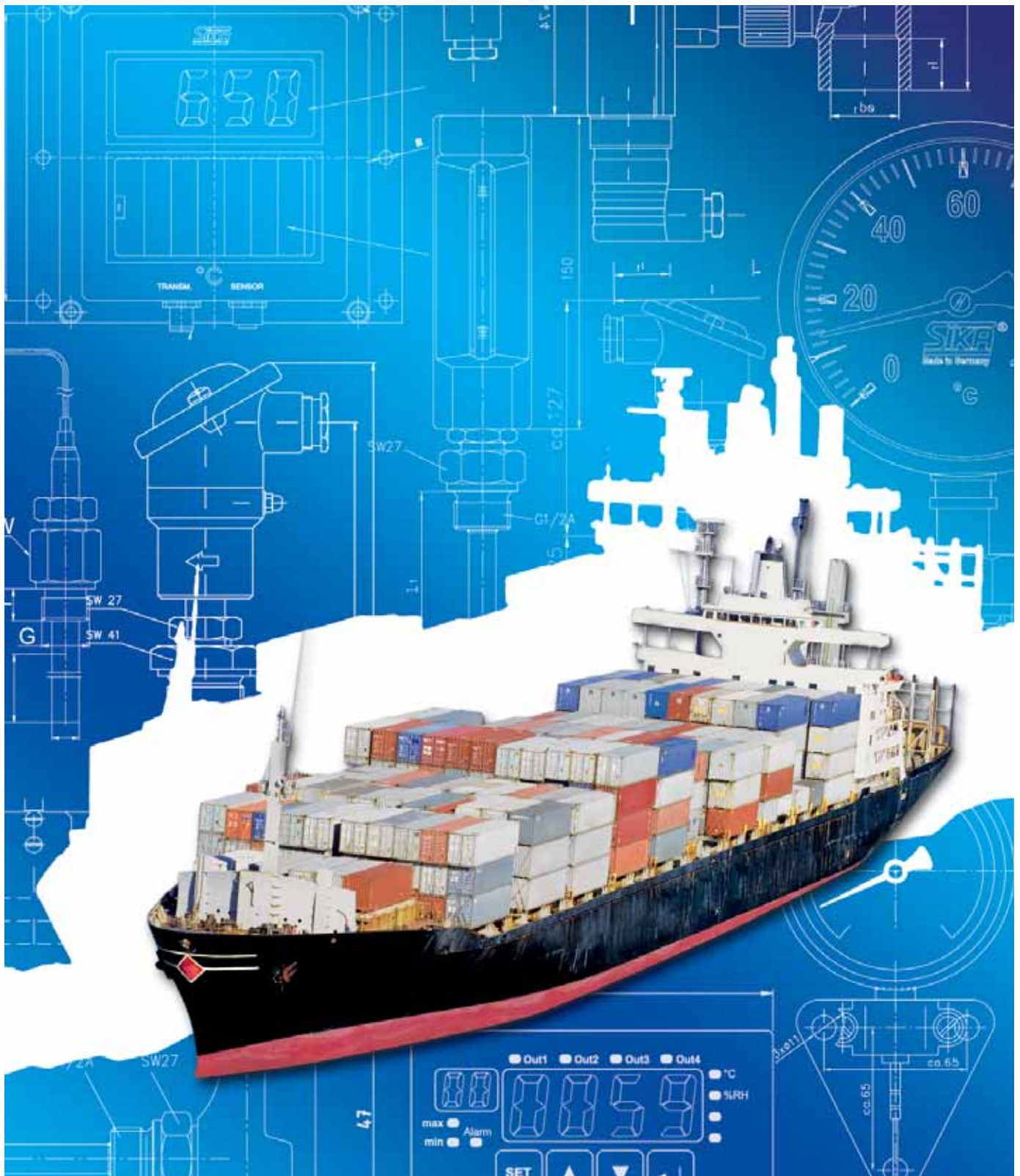




Measuring Instruments for Marine Applications

SIKA[®]

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



Safety and precision on all seas

A name which means reliability

For more than 60 years SIKA has gained experience in the field of measuring technique for the marine industry. Everything started with the famous SIKA Thermometer, which is still an ongoing story of success. Precision, quality and life time of SIKA thermometers still set the global standard for V-shape glass thermometers. Over the years, SIKA has developed a wide range of measurement and calibration solutions for marine applications.

Today, 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 Germanischer Lloyd.



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Mechanical Measuring Instruments

SIKA[®]
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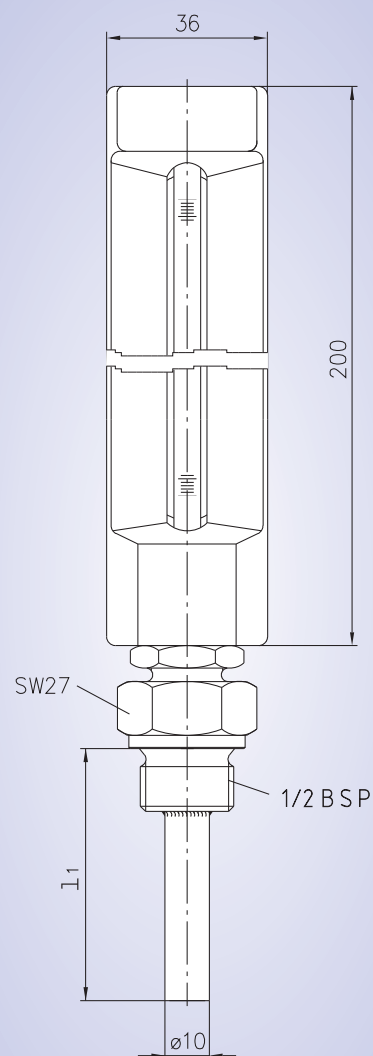
SIKA Thermometers

SIKA Thermometer Type 271 B, straight

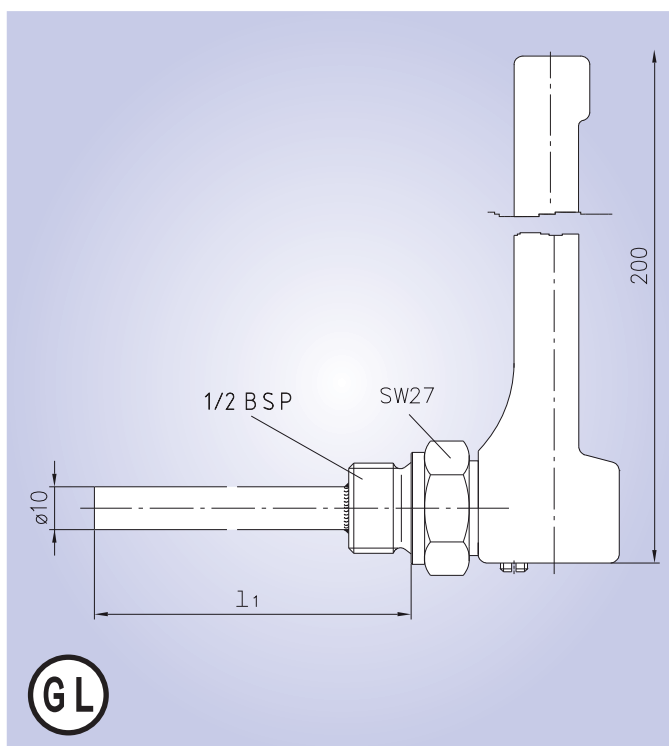
- Casing 200 x 36 mm
- DIN 16189 B
- Connection thread: 1/2" BSP
- Approved by Germanischer Lloyd Certificate No. 94 654-94 HH
- Original SIKA Thermometer, made in Germany

Range [°C]	Order code		
	Immersion tube length [l _i] 63 mm		
	SIKA	ISSA	IMPA
-30...50	2712351106321	61.110.10	65 19 01
0...60	2712061106321	61.110.16	×
0...100	2712101106321	61.110.22	65 19 04
0...120	2712121106321	61.110.28	×
0...160	2712161106321	61.110.34	65 19 07
0...250	2712251106321	×	×
0...300	2712301206321	61.101.19	65 20 53
0...600	2717601206322	61.110.80	65 19 22
Range [°C]	Immersion tube length [l _i] 100 mm		
	SIKA	ISSA	IMPA
-30...50	2712351110021	61.110.11	65 19 02
0...60	2712061110021	61.110.17	×
0...100	2712101110021	61.110.23	65 19 05
0...120	2712121110021	61.110.29	×
0...160	2712161110021	61.100.83	65 19 08
0...250	2712251110021	×	×
0...300	2712301210021	61.101.20	65 19 54
0...600	2712601210022	61.110.81	65 19 23
Range [°C]	Immersion tube length [l _i] 160 mm		
	SIKA	ISSA	IMPA
-30...50	2712351116021	61.110.12	65 19 03
0...60	2712061116021	61.110.18	×
0...100	2712101116021	61.110.24	65 19 06
0...120	2712121116021	61.110.30	×
0...160	2712161116021	61.110.36	65 19 09
0...250	2712251116021	×	×
0...300	2712301216021	61.101.21	65 19 55
0...600	2712601216022	61.110.82	65 19 24

Also available with connection threads: 3/4" BSP, M 20x1.5, M 27x2, 1/2" NPT



SIKA Thermometer Type 272 B, angle 90° ✂



- Casing 200 x 36 mm
- DIN 16190 B
- Connection thread: 1/2" BSP
- Approved by Germanischer Lloyd Certificate No. 94 654-94 HH
- Original SIKA Thermometer, made in Germany

Range [°C]	Order code		
	Immersion tube length [l _i] 63 mm		
	SIKA	ISSA	IMPA
-30...50	2722351106321	61.113.05	65 20 01
0...60	2722061106321	61.113.08	x
0...100	2722101106321	61.113.11	65 20 04
0...120	2722121106321	61.113.14	x
0...160	2722161106321	61.113.17	65 20 07
0...250	2722251106321	x	x
0...300	2722301206321	61.10123	65 20 13
0...600	2722601206322	61.113.40	65 20 22
Range [°C]	Immersion tube length [l _i] 100 mm		
	SIKA	ISSA	IMPA
-30...50	2722351110021	61.113.06	65 20 02
0...60	2722061110021	61.113.09	x
0...100	2722101110021	61.113.12	65 20 05
0...120	2722121110021	61.113.15	x
0...160	2722161110021	61.113.18	65 20 08
0...250	2722251110021	x	x
0...300	2722301210021	61.101.23	65 20 14
0...600	2722601210022	61.113.41	65 20 23
Range [°C]	Immersion tube length [l _i] 160 mm		
	SIKA	ISSA	IMPA
-30...50	2722351116021	61.113.07	65 20 03
0...60	2722061116021	61.113.10	x
0...100	2722101116021	61.113.13	65 20 06
0...120	2722121116021	61.113.16	x
0...160	2722161116021	61.113.19	65 20 09
0...250	2722251116021	x	x
0...300	2722301216021	61.10124	65 20 15
0...600	2722601216022	61.113.42	65 20 24

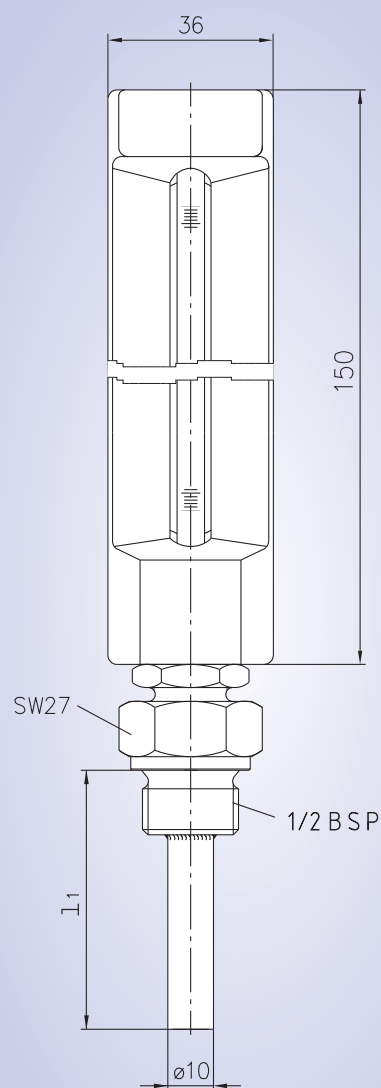
Also available with connection threads: 3/4" BSP, M 20x1.5, M 27x2, 1/2" NPT

SIKA Thermometer Type 291 B, straight

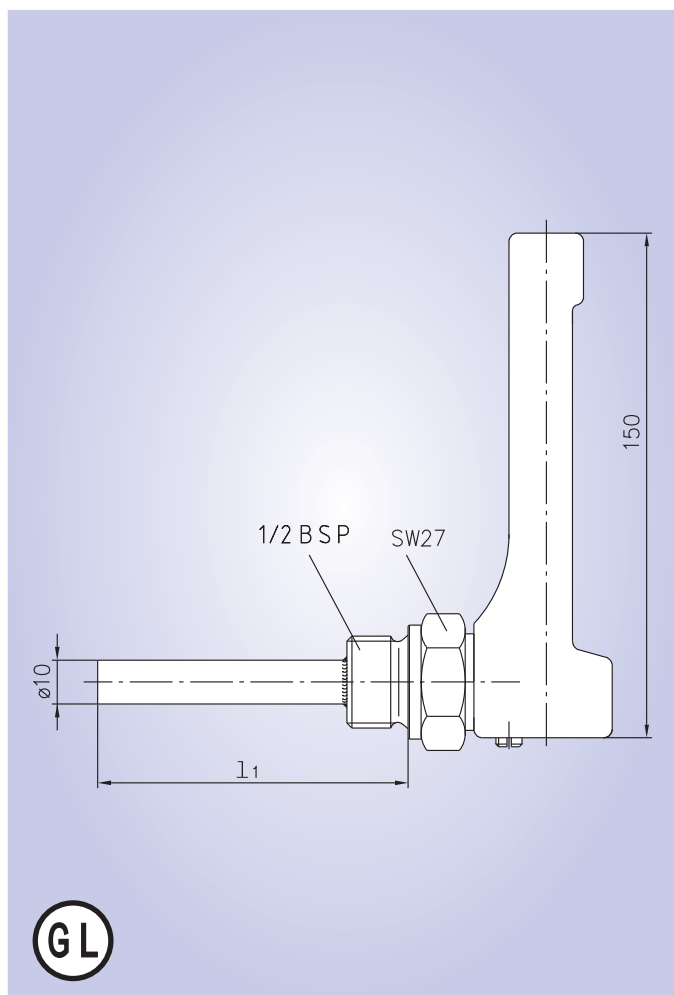
- Casing 150 x 36 mm
- DIN 16185 B
- Connection thread: 1/2" BSP
- Approved by Germanischer Lloyd Certificate No. 94 654-94 HH
- Original SIKA Thermometer, made in Germany

Range [°C]	Order code		
	Immersion tube length [l _i] 63 mm		
	SIKA	ISSA	IMPA
-30...50	2912351106321	61.111.10	65 19 41
0...60	2912061106321	61.111.16	×
0...100	2912101106321	61.111.22	65 19 44
0...120	2912121106321	61.111.28	×
0...160	2912161106321	61.111.34	65 19 47
0...250	2912251106321	×	×
0...300	2912301206321	61.111.50	65 19 53
0...600	2912601206322	61.111.80	65 19 62
Range [°C]	Immersion tube length [l _i] 100 mm		
	SIKA	ISSA	IMPA
	SIKA	ISSA	IMPA
-30...50	2912351110021	61.111.11	65 19 42
0...60	2912061110021	61.111.17	×
0...100	2912101110021	61.111.23	65 19 45
0...120	2912121110021	61.111.29	×
0...160	2912161110021	61.111.35	65 19 48
0...250	2912251110021	×	×
0...300	2912301210021	61.111.51	65 19 54
0...600	2912601210022	61.110.81	65 19 63
Range [°C]	Immersion tube length [l _i] 160 mm		
	SIKA	ISSA	IMPA
	SIKA	ISSA	IMPA
-30...50	2912351116021	61.111.12	65 19 43
0...60	2912061116021	61.111.18	×
0...100	2912101116021	61.111.24	65 19 46
0...120	2912121116021	61.111.30	×
0...160	2912161116021	61.111.36	65 19 49
0...250	2912251116021	×	×
0...300	2912301216021	61.111.52	65 19 55
0...600	2912601216022	61.111.82	65 19 64

Also available with connection threads: 3/4" BSP, M 20x1.5, M 27x2, 1/2" NPT



SIKA Thermometer Type 292 B, angle 90° ✧



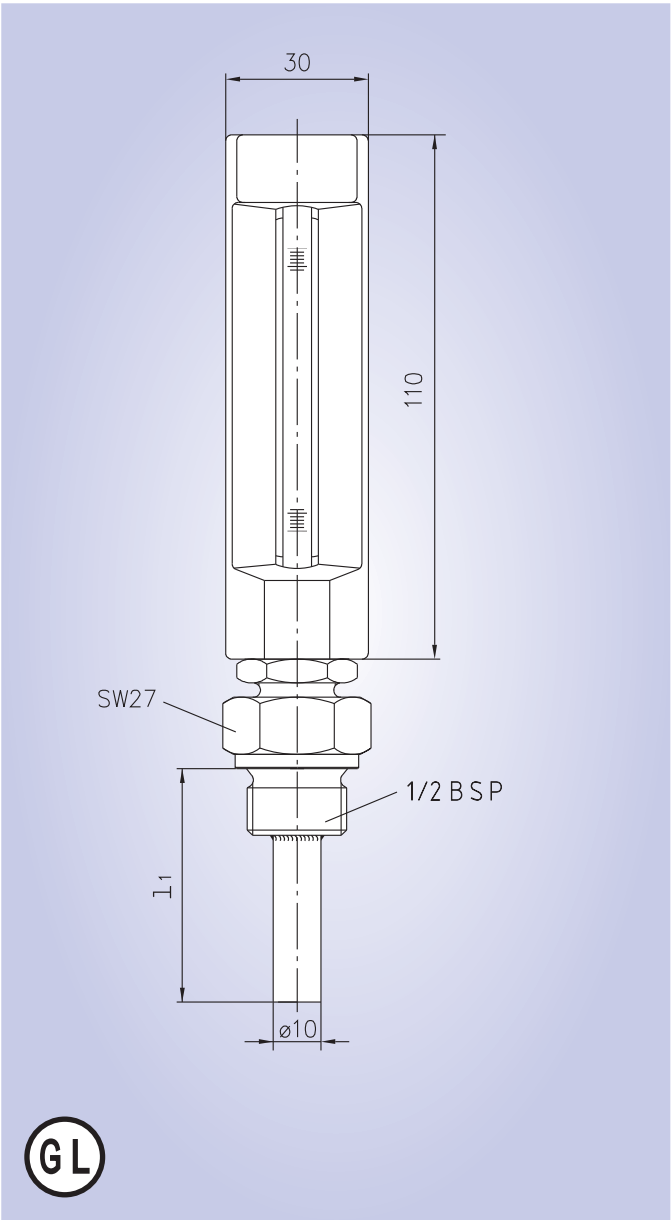
- Casing 150 x 36 mm, Type 292 B
- DIN 16186 B
- Connection thread: 1/2" BSP
- Approved by Germanischer Lloyd Certificate No. 94 654-94 HH
- Original SIKA Thermometer, made in Germany

Range [°C]	Order code		
	Immersion tube length [l ₁] 63 mm		
	SIKA	ISSA	IMPA
-30...50	2922351106321	61.114.08	65 20 41
0...60	2922061106321	61.114.13	×
0...100	2922101106321	61.114.18	65 20 44
0...120	2922121106321	61.114.23	×
0...160	2922161106321	61.114.28	65 20 47
0...250	2922251106321	×	×
0...300	2922301206321	61.114.38	65 20 53
0...600	2922 601206322	61.114.43	65 20 62
Range [°C]	Immersion tube length [l ₁] 100 mm		
	SIKA	ISSA	IMPA
-30...50	2922351110021	61.114.09	65 20 42
0...60	2922061110021	61.114.14	×
0...100	2922101110021	61.114.19	65 20 45
0...120	2922121110021	61.114.24	×
0...160	2922161110021	61.114.29	65 20 48
0...250	2922251110021	×	×
0...300	2922301210021	61.114.39	65 20 54
0...600	2922601210022	61 114.44	65 20 63
Range [°C]	Immersion tube length [l ₁] 160 mm		
	SIKA	ISSA	IMPA
-30...50	2922351116021	61.114.10	65 20 43
0...60	2922061116021	61.114.15	×
0...100	2922101116021	61.114.20	65 20 46
0...120	2922121116021	61.114.25	×
0...160	2922161116021	61.114.30	65 20 49
0...250	2922251116021	×	×
0...300	2922301216021	61.114.40	65 20 55
0...600	2922601216022	61.114.45	65 20 64

Also available with connection threads: 3/4" BSP, M 20x1.5, M 27x2, 1/2" NPT

SIKA Thermometer Type 174 B, straight

- Casing 110 x 30 mm
- DIN 16181 B
- Connection thread: 1/2" BSP
- Approved by Germanischer Lloyd Certificate No. 94 654-94 HH
- Original SIKA Thermometer, made in Germany



Range [°C]	Order code		
	Immersion tube length [l _i] 30 mm		
	SIKA	ISSA	IMPA
-30...50	1742351103021	×	×
0...60	1742061103021	×	×
0...100	1742101103021	×	65 19 81
0...120	1742121103021	×	×
0...160	1742161103021	×	×
0...200	1742201103021	×	65 19 86
Range [°C]	Immersion tube length [l _i] 40 mm		
	SIKA	ISSA	IMPA
-30...50	1742351104021	×	×
0...60	1742061104021	×	×
0...100	1742101104021		65 19 82
0...120	1742121104021	×	×
0...160	1742161104021	×	×
0...200	1742201104021	×	65 19 87
Range [°C]	Immersion tube length [l _i] 63 mm		
	SIKA	ISSA	IMPA
-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
Range [°C]	Immersion tube length [l _i] 100 mm		
	SIKA	ISSA	IMPA
-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
Range [°C]	Immersion tube length [l _i] 160 mm		
	SIKA	ISSA	IMPA
-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

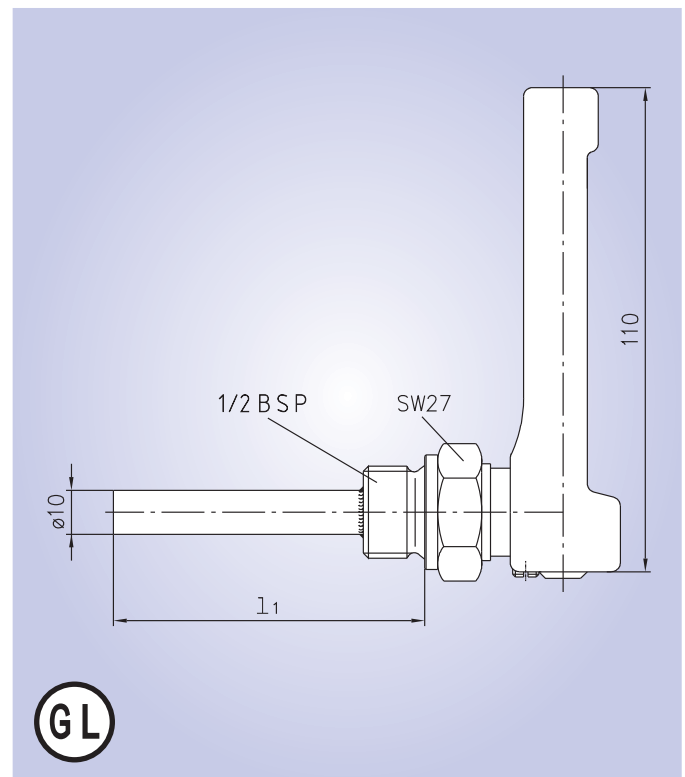
Also available with connection threads: 3/4" BSP, M 20x1.5, M 27x2, 1/2" NPT

SIKA Thermometer Type 175 B, angle 90° ✧

Range [°C]	Order code		
	Immersion tube length [l _i] 30 mm		
	SIKA	ISSA	IMPA
-30...50	1752351103021	×	×
0...60	1752061103021	×	×
0...100	1752101103021	×	65 20 81
0...120	1752121103021	×	×
0...160	1752161103021	×	×
0...200	1752201103021	×	65 20 86
Range [°C]	Immersion tube length [l _i] 40 mm		
	SIKA	ISSA	IMPA
-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
Range [°C]	Immersion tube length [l _i] 63 mm		
	SIKA	ISSA	IMPA
-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
Range [°C]	Immersion tube length [l _i] 100 mm		
	SIKA	ISSA	IMPA
-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
Range [°C]	Immersion tube length [l _i] 160 mm		
	SIKA	ISSA	IMPA
-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: 3/4" BSP, M 20x1.5, M 27x2, 1/2" NPT

- Casing 110 x 30 mm
- DIN 16182 B
- Connection thread: 1/2" BSP
- Approved by Germanischer Lloyd Certificate No. 94 654-94 HH
- Original SIKA Thermometer, made in Germany



SIKA Glass Inserts for replacement

SIKA Glass Inserts for Thermometers

SIKA Order code			
Thermometer type			
straight	174		
	291		
	271		
angle 90°	175		
	292		
	272		
Immersion tube			
Type B		2	
Measuring ranges			
-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	
Scale			
Celsius (°C)		1	
Celsius + Fahrenheit (°C + °F)		2	
Filling			
Standard fluid for ranges up to 250 °C	Fü =	1	
Mercury for ranges above 250 °C	HG =	2	
Immersion tube length			
Immersion length l_1 in mm			030
(according to complete thermometers)			040
for types B with fixed male connection thread			063
			100
			160
			250



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.

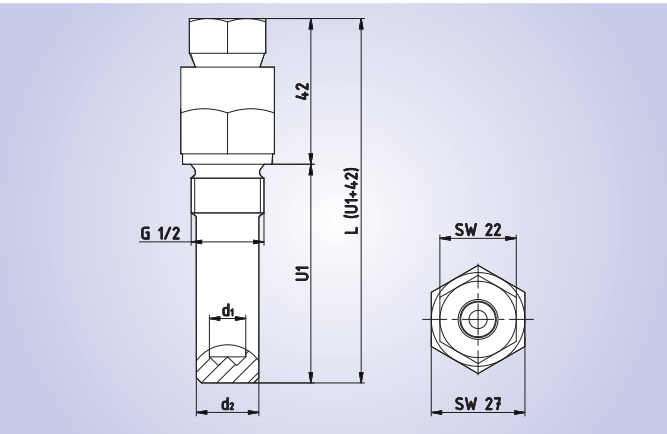


Diesel Engine Protection Tubes

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.



Mechanical Measuring Instruments

Order code

SIKA Order code					
Order code starting with		ZVFG			
Mounting length [U ₁]					
	100 mm		100		
	135 mm		135		
	160 mm		160		
	200 mm		200		
	250 mm		250		
	300 mm		300		
Thread Size					
	½" BSP		2		
	¾" BSP		3		
Material		1.4571 Stainless Steel		3	
Thermometer immersion tube					
	Ø 12 mm			4	
	Ø 13 mm			6	
Male thread					M

Please ask for customised specifications

Diesel Engine Thermometers

Direct Mount 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.

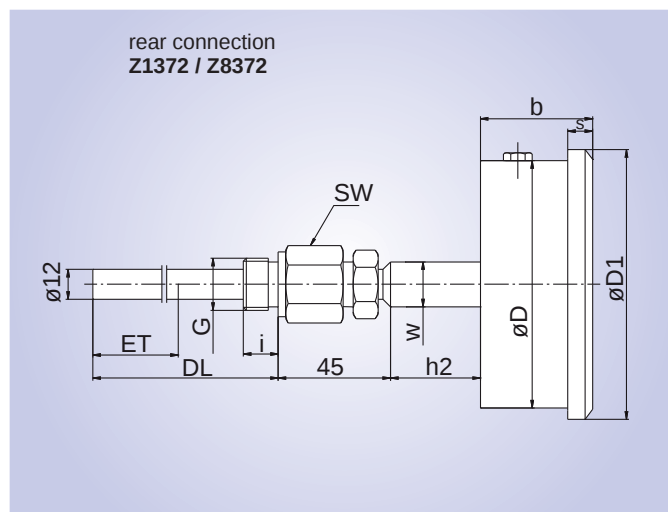
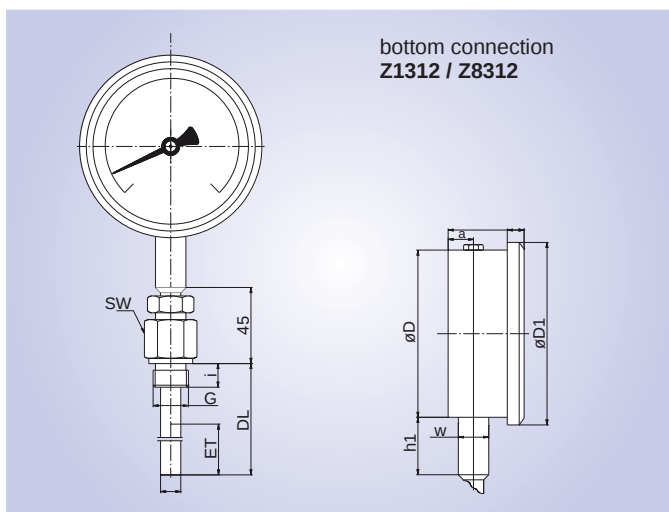


Technical data

Measuring range	0...100 °C 0...120 °C 0...160 °C 0...250 °C 50...650 °C
	Double scale °C and °F available
Casing	Ø 80 or 100 mm stainless steel 1.4301
Dial	Silver coloured, black markings
System	Nitrogen filled system
Immersion tube	Stainless steel
Standard dimension lengths "DL" in mm	100, 135, 160, 200, 250, 300, 400
Thread connection	Adjustable compression fitting
Thread size	½" BSP, ¾" BSP
Accuracy	Class 1.0, Limits of error acc. DIN EN 13190
Approval	 Approved by Germanischer Lloyd, Certificate No. 12 026-98 HH

Please ask for customised specifications

Dimensions



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

SIKA Order code										ISSA-Code	IMPA-Code
Type (case diameter)	80 mm 100 mm	Z83 Z13									
Case configuration	Bottom connection Rear connection	12 72									
External thread	male	M									
Temperature range	0...100 °C 0...120 °C 0...160 °C 0...200 °C 0...250 °C 50...650 °C	10 12 16 20 25 56									
Temperature unit	°C	1									
Mounting length DL	100 mm 135 mm 160 mm 200 mm 250 mm 300 mm 400 mm	100 135 160 200 250 300 400									
Thread size	½" BSP ¾" BSP										
Adjustable compression fitting		9									
Immersion tube	Ø 12 mm, stainless steel	2									

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

Diesel Engine 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 for panel mounting.

Typical Applications

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

Remote Diesel Engine Thermometer

The remote reading versions are of the same mechanical sensor design as the direct mount 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.

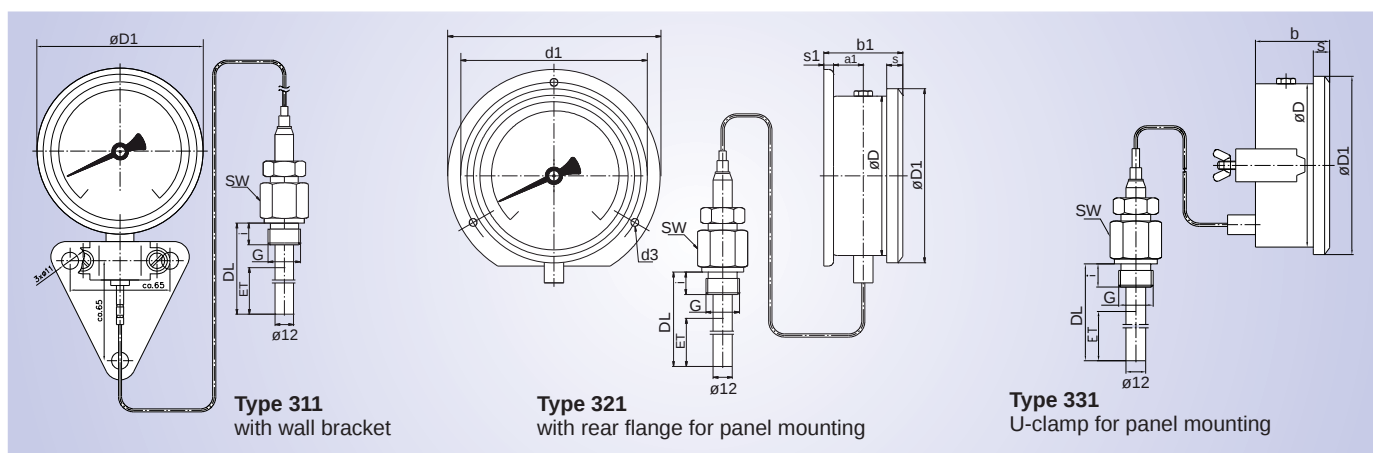


Technical data

Display range	0...100 °C 0...120 °C 0...160 °C 0...250 °C 50...650 °C
	Dual scale °C and °F available
Casing	Ø 80 or 100 mm stainless steel 1.4301
Dial	Silver coloured, black markings
System	Nitrogen filled system
Immersion tube	Stainless steel
Standard dimension lengths "DL" in mm	100, 135, 160, 200, 250, 300, 400
Thread connection	Adjustable compression fitting
Thread size	½" BSP, ¾" BSP
Accuracy	Class 1.0, Limits of error acc. DIN EN 13190
Approval	 Approved by Germanischer Lloyd Certificate No. 12 027-98 HH

Please ask for customised specifications

Dimensions



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

Order code

SIKA Order code							ISSA-Code	IMPA-Code
Type	311 321 331	Z311 Z321 Z331						
Case diameter	80 mm 100 mm	B2 C2						
Temperature range	0...100 °C 0...120 °C 0...160 °C 0...250 °C 50...650 °C	10 12 16 25 56						
Mounting length DL	135 mm 160 mm 200 mm 250 mm 300 mm 400 mm	135 160 200 250 300 400						
Thread size	½" BSP ¾" BSP	2 3						
Adjustable compression fitting			9					
Immersion tube	Ø 12 mm, stainless steel			2				
Capillary line	1 m 3 m 5 m				1 3 5			
Capillary material	stainless steel, spiral protection					C		

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

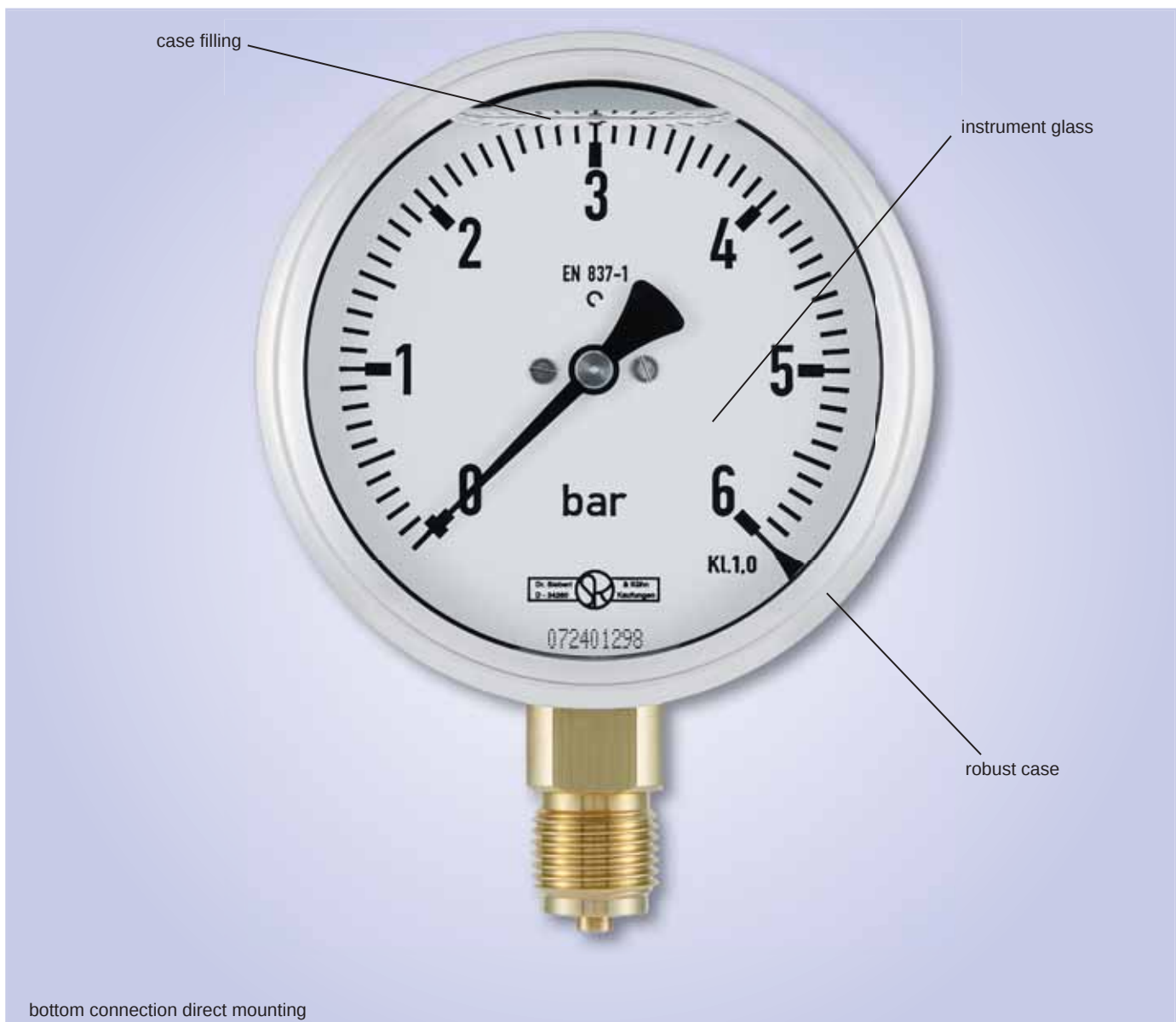
Pressure Gauges

SIKA-Pressure Gauges, Type MRE-M

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
- Case diameter 63, 80 and 100 mm
- Filled with glycerine
- Bottom or rear connection
- Connection thread: ½" BSP (¼" BSP for 63 mm), brass
- Optional with mounting flange or U-clamp
- Accuracy
 - class 1 for case diameter 80 and 100 mm
 - class 1.6 for case diameter 63 mm
- GL available on request





bottom connection with back flange



rear connection direct mounting

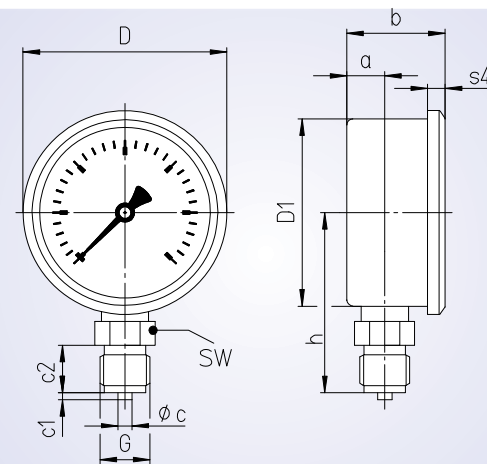


rear connection with front flange

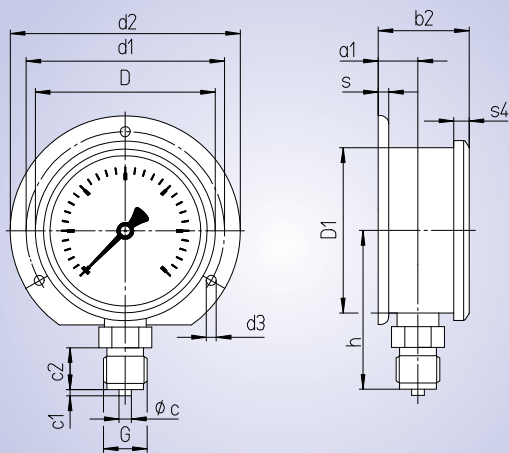


rear connection with U-clamp fixing

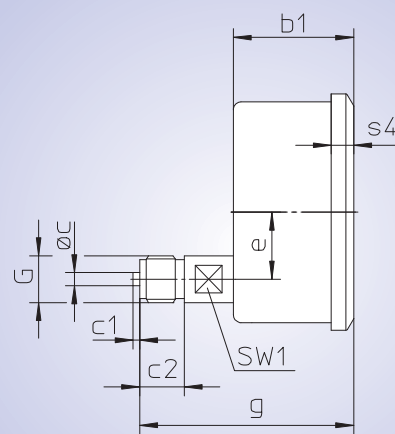
Dimensions



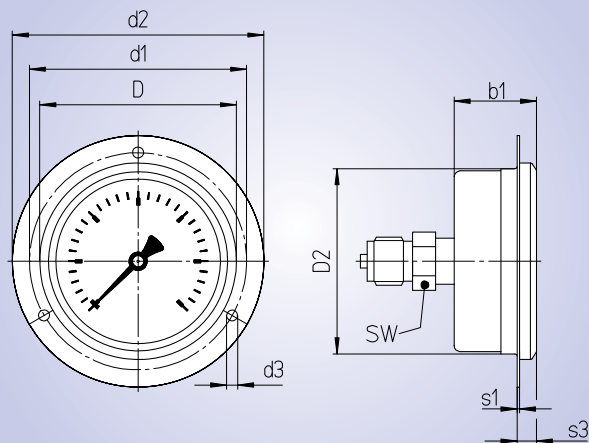
bottom connection direct mounting



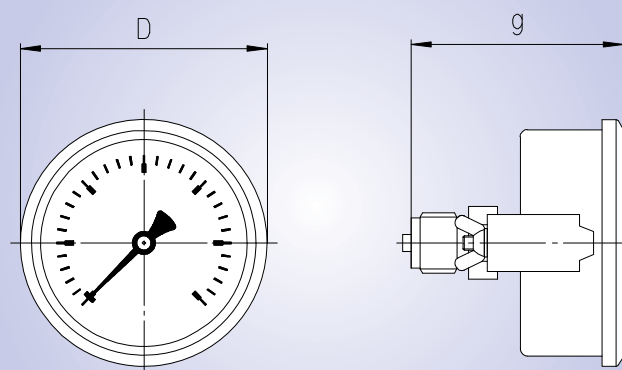
bottom connection with back flange



rear connection direct mounting



rear connection with front flange



rear connection with U-clamp fixing

Dimensions and order code

NG	D	D1	a	a1	b	b1	b2	c	c1	c2	d1	d2	d3	e	G	g	h	s	s1	s2	s3	SW
63	62	67	12.5	15.5	35	36	38	5	2	13	75	85	3.7	-	¼" BSP	58	54	8,5	5	1	4.5	14
80	79	86	16	21	44	38.5	46	6	3	20	95	110	4.8	-	½" BSP	82	76	9	5	1	6	22
100	99	106	20	23.5	55	55	58.5	6	3	20	116	132	4.8	30	½" BSP	97	87	10	6	1	6	22

SIKA Order code														ISSA-Code				IMPA-Code			
MREM																					
Dial size	63 mm										1										
	80 mm										2										
	100 mm										3										
Bottom connection	¼" BSP (63 mm)										1										
Bottom connection	½" BSP (80 mm / 100 mm)										1										
Rear connection	¼" BSP (63 mm)										5										
Rear connection	½" BSP (80 mm / 100 mm)										2										
Material thread connection	brass										1										
	stainless steel (for 1000 / 1600 bar , only)										3										
Measuring range [bar]	- 0.6...0										305										
	-1...0										315										
	-1...0.6										505										
	-1...1.5										515										
	-1...3										525										
	-1...5										535										
	-1...9										545										
	-1...15										555										
	0...0.6										015										
	0...1										025										
	0...1.6										035										
	0...2.5										045										
	0...4										055										
	0...6										065										
	0...10										075										
	0...16										085										
	0...25										095										
	0...40										105										
	0...60										115										
	0...100										125										
	0...160										135										
	0...250										145										
	0...400										155										
	0...600										165										
	0...1000* (only 100 mm dial size)										175										
	0...1600* (only 100 mm dial size)										185										
Bottom connection	direct mounting										00										
	back flange										10										
Rear connection	direct mounting										00										
	front flange										20										
	U-clamp fixing										30										
Case filling	glycerine													G							

* with stainless steel bourdon spring connection

Please ask for customised specifications.

Your Personal Notes

[illegible]

Electronic Monitoring Systems and Temperature Sensors

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



Electronic Digital Thermometer

SolarTemp Marine Type 850 with Mounting Plate

- Display suitable for sensor elements Pt1000
- Type of protection: IP65
- Measuring range: 0...650 °C
- Optional: transmitter output 4...20mA
- Selection of temperature sensors for SolarTemp Marine Type 850 is located on page 27



Technical data

Ambient temperature	-5...60 °C (case)
Case	170 x 150 mm, steel case blue powder-coated, aluminium mounting plate
Power supply	Solar cell
Light density	Min. 50 Lux
Digital display	4 digit, 7 segment display, 25,4 mm high
Approved by several classification societies	

Order code

Type	Range	SIKA Order code
Standard version	0...650°C	85065P54
Transmitter version	4-20 mA △ 0...600 °C	85065P53360
Transmitter version	4-20 mA △ 0...300 °C	85065P53330

SolarTemp applications



SolarTemp type approval certificates



Temperature Sensors

Temperature sensors for marine applications

Temperature measurement in marine applications makes high demands on sensor reliability. Standard temperature sensors not specifically designed for this application will not last long time in this environment. Especially sensors used on diesel engines and propulsion systems are subject to severe vibration with acceleration as high as 200 g in some cases as well as occasional exposure to water and oil. SIKA has long-term experience in manufacturing products for the marine industry and together with engine builders and end users has developed a wide range of temperature sensors suitable for this harsh environment.

Rugged design, vibration resistant components and reliable manufacturing give SIKA sensors a long lifetime also under difficult conditions. For quality assurance each sensor is thoroughly tested during and after production. The quality management system installed by SIKA guarantees a constant and reliable performance of the products.

Due to the high flexibility of SIKA, sensors in many common designs are available. Special sensors can be manufactured on request

Important calibration instructions

Temperature sensors may be subject to changes in accuracy during their lifetime. 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. Please see selection of Test & Calibration products on page 37.

SIKA temperature sensors ...

- for exhaust gas temperature measurement
- for cooling water temperature measurement
- for oil temperature measurement

Approvals

- Most sensors are approved by Germanischer Lloyd
- Additional approvals on request



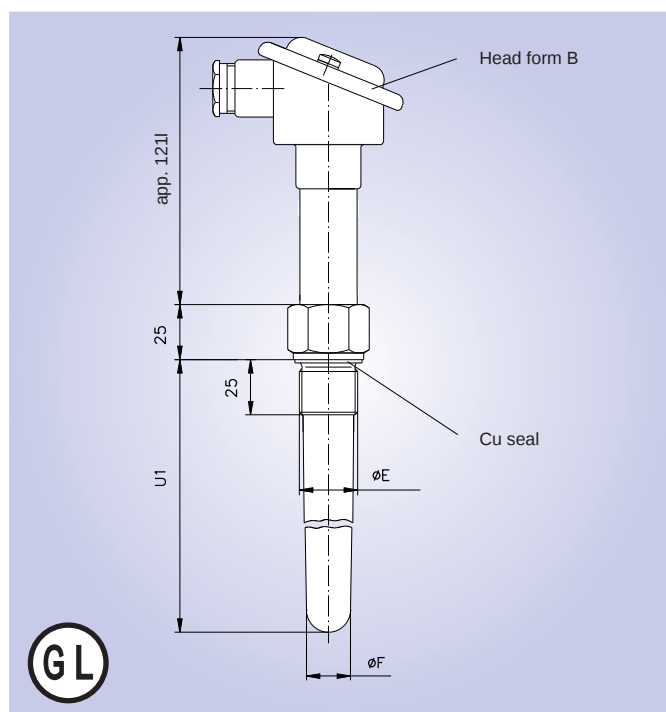
Temperature Sensors approval certificates



Temperature Sensors

For exhaust gas temperature measurement

- Accuracy class
Resistance thermometer class B
Thermocouple class 1
- Measuring insert is interchangeable
- Diameter
17/23 mm, conical up to 150 mm
20/23 mm, conical from 150 mm
- Type of protection IP54
- Max. media temperature 600 °C
- Process connection with fixed thread connection
- Electrical connection
Head form B of aluminium die casting, silver finish
- Max. ambient temperature 200 °C
- Approval
Germanischer Lloyd, GL



Type	SIKA Order code						ISSA-Code	IMPA-Code
Resistance thermometer	W							
Thermocouple	T							
Diameter F	17/23 mm, conical up to 150 mm length (U1) 20/23 mm conical from 150 mm length (U1)	17 20						
Material	stainless steel 1.4571		3					
Sensor element	1 x Pt100 3-wire / class B 1 x NiCr-Ni (type K)			P31 1TK				
Immersion tube length U1	100 mm 150 mm 200 mm			100 150 200			61.116.00 (general number)	65 25 22 (general number)
Measuring insert	interchangeable				2			
Electrical connection	head form B with socket head form B with transmitter				B0 BT			
Process connection E	3/4" BSP M 27x2 M 33x2					3T6 HT6 FT6		

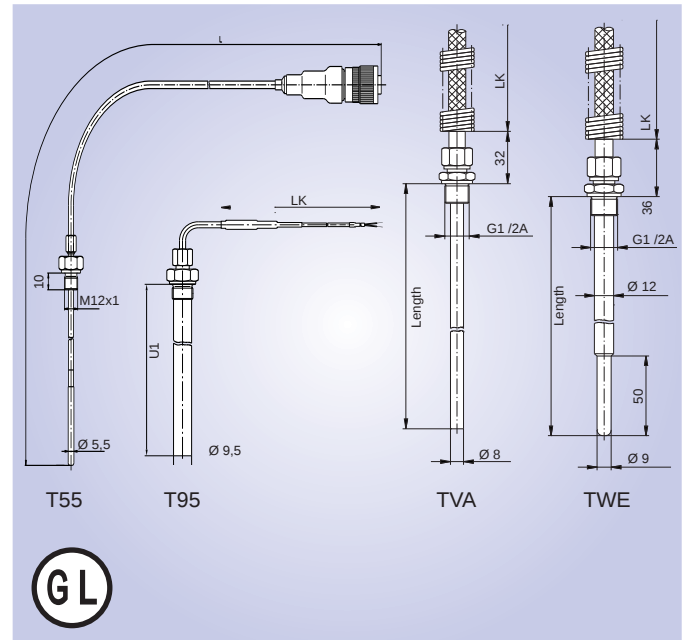
Please ask for customised specifications

Cable Sensors

Vibration resistant

For exhaust gas temperature measurement of combustion engines

- Accuracy class
Resistance thermometer class B
Thermocouple class 1
- Measuring insert is not changeable
- Diameter 8 mm or 12 mm
- Type of protection IP54
- Max. temperature
600 °C for resistance thermometer and
800 °C for thermocouple
- Process connection
without or with compression fitting
- Electrical connection
Compensation pipe, wire-braided
- Approval
Germanischer Lloyd, GL (only for type TWE)

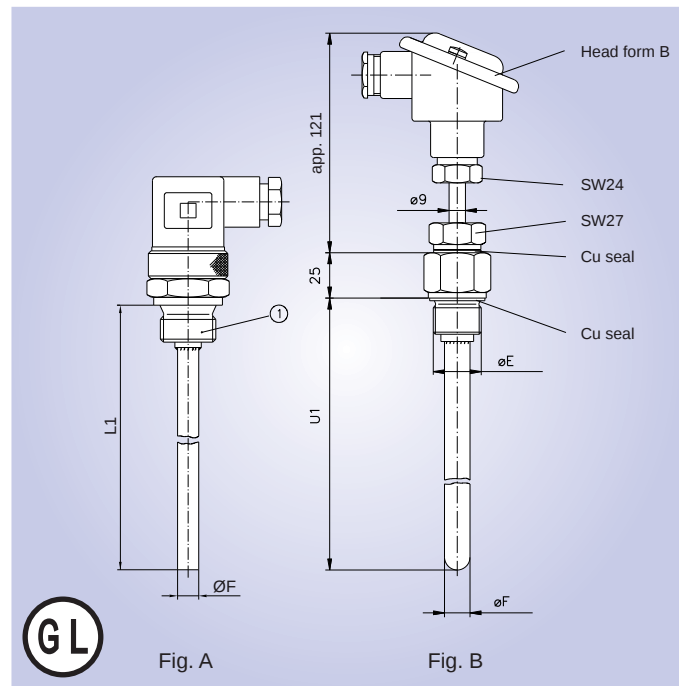


Type	SIKA Order code					ISSA-Code	IMPA-Code
Diameter	5.5 mm 9.5 mm 8 mm 12 mm	T55 T95 TVA TWE					
Material	stainless steel 1.4571 stainless steel 1.4571	type T55 / T99 type TVA / TWE	3 C				
Sensor element	1 x NiCr-Ni (type K) 2 x NiCr-Ni 1 x Pt100 3-wire / class B (only Ø 12 mm)	K11 K12 P31					
Length	100 mm 150 mm 175 mm 200 mm 250 mm 1500 mm (only T55)	0100 0150 0175 0200 0250 1500				61.116.00 - 61.116.13	65 25 21 - 65 25 26
Electrical connection	FEP cable, wire-braided fibre glass, wire-braided mineral insulated cable			07 08 09			
Process connection	without clamp coupling steel, galvanized ¼" BSP clamp coupling steel, galvanized ½" BSP clamp coupling steel, M 12x1 (only 5.5 mm)			0 I K R			
Cable length LK	without cable 1.0 m 1.5 m 2.0 m 3.0 m			00 01 02 03 05			

Please ask for customised specifications

For cooling water temperature measurement

- Accuracy class
Resistance thermometer class B
- Measuring insert is interchangeable
- Diameter 8 mm, 12 mm or 14 mm
- Type of protection
 - IP65 (Fig. A)
 - IP54 (Fig. B)
- DIN 43772
- Max. temperature 200 °C
- Process connection with fixed thread connection
- Electrical connection
Head form B made of aluminium die casting and silver finish or
Cable socket angle type type Form A
- Approval
Germanischer Lloyd, GL (only for Fig. A)



Type	SIKA Order code				ISSA-Code	IMPA-Code
Resistance thermometer	W					
Diameter F	8 mm (Fig. A)	08				
	12 mm (Fig. B)	12				
	14 mm (Fig. B)	14				
Material	stainless steel 1.4571	3				
Sensor element	1 x Pt100 3-wire / class B	P31				
Immersion tube length U1	80 mm	080				
	100 mm	100				
	120 mm	120			61.116.00	65 25 21
	150 mm	150			-	-
	200 mm	200			61.116.13	65 25 26
Measuring insert	interchangeable	2				
Electrical connection	head form B with ceramic socket (Fig. B)			B0		
	head form B with transmitter* (Fig. B)			BT		
	cable socket angle type Form A (Fig. A)			10		
Process connection E	½" BSP			2T2		
	¾" BSP			3T2		
	M 27x2			HT2		
	M 33x2			FT2		

* For this please ask us for our transmitter catalogue.

Please ask for customised specifications

Temperature Sensors for SolarTemp



Temperature Sensors for SolarTemp Marine Type 850

Type		SIKA Order code								ISSA-Code	IMPA-Code
Resistance thermometer		W								61.122.00 - 61.122.09	65 18 55 - 65 18 58
Diameter	14 mm 20 mm	14 20									
Material	stainless steel 1.4571		3								
Sensor element	2 x Pt1000 (only for transmitter version) 1 x Pt1000		P53 P54								
Immersion tube length U1	100 mm (only for Ø 14 mm) 200 mm		100 200								
Measuring insert	interchangeable		2								
Electrical connection	plug M 12x1 head form B		3 B								
Cable	Teflon FEP shielded (only plug M 12x1) without cable (only Head B)		5 0								
Mechanical connection	½" BSP ¾" BSP thread M 33x2		2 3 F								
Length of sensor cable (only plug M 12x1)	2 m 3 m 5 m							03 05 09			

Transmitter and Sensor Cables for SolarTemp Marine Type 850

Type		SIKA Order code			ISSA-Code	IMPA-Code	
Cable		WK					
Sensor cable (connection head to indicator)			S				
Transmitter cable (connection indicator to remote Control)			B				
Teflon FEP				82			
Cable length	2 m				02000F	x	x
	3 m				03000F		
	5 m				05000F		
	10 m				10000F		
	15 m				15000F		
	20 m				20000F		

Please ask for customised specifications

Kombitemp®

Temperature Sensors with local display

Technical data			
Type	K 122	K 422	K 522
Housing	die cast aluminium, gold-coloured anodised		
length	110 mm	150 mm	110 mm
width	30 mm	36 mm	30 mm
Thermometer capillaries	special glass prismatic approx. 6 mm diameter, with black burnt-in scale, blue thermometer filling		
Immersion tube	diameter 10 x 1 mm		
Electrical Connection	cable socket angle type, Form A		
Immersion tube material	brass, up to PN 16 bar st. steel, up to PN 40 bar		
Design	straight, fixed thread connection		angle type 90° ↗, fixed thread connection



Type	SIKA Order code							ISSA-Code	IMPA-Code
K 122	K122								
K 422	K422								
K 522	K522								
Temperature range	-30...50 °C	35							
	0...60 °C	06							
	0...100 °C	10							
	0...120 °C	12							
	0...160 °C	16							
	0...200 °C	20							
Immersion tube length	63	063							
	100	100							
	160	160							
Mechanical connection	½" BSP		2						
	M 20 x 1.5		7						
Immersion tube material	brass			1					
	stainless steel			3					
Electrical temperature sensors	1x Pt100 / 3-wire				1				
	1x Pt1000 / 2-wire				7				
Head transmitter	without transmitter					0			
Scale	only °C						0		
	°C and °F						2		

Please ask for customised specifications

CargoTemp Roller

More safety by manual temperature monitoring of bulk cargo



Mobile temperature monitoring in your cargo holds!

- Easy to handle
- Cable with depth indication
- Large integrated LC display
- Comes in a sturdy plastic suitcase

Why is temperature monitoring important?

Many products are self-heating and/or self-igniting as bulk cargo. This autonomous process may lead to the cargo destroying itself, if measures to counteract are not taken in time.

Which products are affected?

- Raw materials such as tobacco, cocoa, cotton and jute
- oleiferous goods such as seeds and nuts
- all products that can be grouped under the umbrella term „oil cake“, such as expeller, pellets and extractions, as well as
- aluminium powder, ores and coals

As a basic principle, all goods falling under the IMDG Code, chapter 2.4 class 4.2, should be temperature monitored, in order to detect the incipient self-heating process in time.

Technical Data	
Measurement Input	Pt1000 / 2-wire
Cable length	35 m
Cable design	temperature proofed, braided FEP cable, with 6 marks every 5 meters for depth indication, tension = 50 N
Measuring probe	length = 100 mm, Ø = 20 mm, weight = 200 g
Measurement input	Pt1000 / 2-wire
Measuring range	-40.0...150.0 °C
Resolution	0.1 °C
Accuracy	±0.5 % FS ±1 digit
Display	3 ½ digit LCD, 18 mm high
Measuring rate	3 sec.
Power supply	maintenance-free battery
Battery life time	approx. 10 years
Housing	robust PP-plastic, blue/black, with handle
Housing size	Ø approx. 210 mm, depth approx. 95 mm, handle approx. 45 mm
Protection class	IP40
Accessories	portable ABS-plastic case with foam inlay case dimensions 394 x 294 x 106 mm
Weight	approx. 2 kg incl. case
SIKA Order code	ETCTP000350004

Display and Monitoring System

Centralised data collection with EB 3000

The EB system is an easy to use cost effective way to interface distributed measuring points to a central display unit. The connection to a monitoring system or a PC is possible for logging the data. Up to 240 sensors on a total bus length of up to 1000 m can be installed. The cabling can be made either in a bus, star or tree design and thus allows great flexibility of the system. The EB system is mainly used for temperature measurement; many components for other applications are available on request

Application area

- Cargo hold monitoring for bulkcarriers, especially if heat sensitive goods are carried for example rice, cereals, carbon and wood.
- Monitoring of self heating or self igniting bulk cargo as "oil cake" cargos, cotton, jute, ores...
- Other applications where more than one sensor is required for measuring, controlling, monitoring or recording.

Technical features

- Connection of up to 240 sensors possible
- Total bus length of up to 1000 m
- Polarity-free 2-wire system in bus, star or tree design
- Bi-directional exchange of information
- Polarity-free and short-circuit proof sensor module
- Supply of the sensor via bus cable
- All bus functions are maintained even in case of sensor module failure
- Fully automatic start-up installation via software is possible
- New sensor modules 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

Technical Data	
Inputs	20 + 2 virtual channels
Display	1 line, 4 digit 7 segment LED, red 13mm high
Channel display	2-digit, 7-segment LED, 7 mm high, red
Status display	11 LED
Relay output	4 x SPST, 5 A / 2 A / 250 VAC and 1 x SPDT, 5 A / 2 A / 250 VAC
Serial interface	EB interface
Protection class	IP65 (front)
Dimensions	96 x 48 x 100 mm (W x H x D)
Power supply	230 VAC, 115 VAC, 24 VAC, 12 VAC, 50/60 Hz
SIKA Order code	EME8EB30000000



Sensor Modules for temperature

Technical data	
Sensor type	Pt1000 / 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

Please ask for customised specifications



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

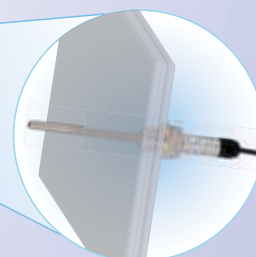
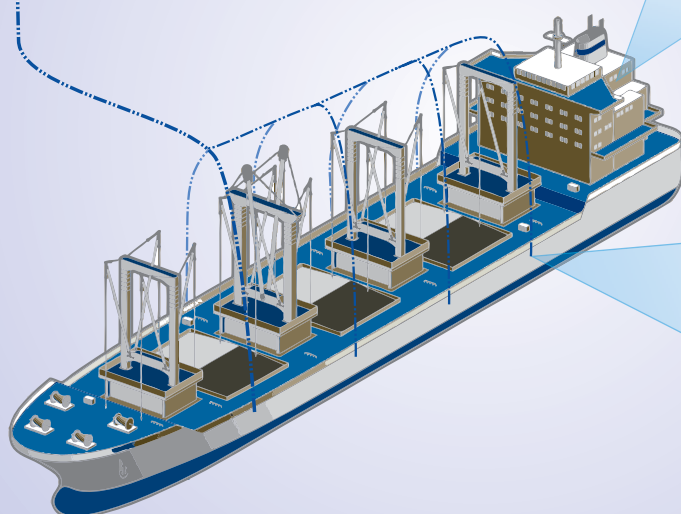


Type EBT-IF2
(Standard, D = 6 mm, L = 100 mm,
½" BSP, without extension tube)



Type EBT-IF3
(Standard, D = 6 mm, L = 50 mm,
½" BSP, with extension tube 100 mm)

Application example for hold monitoring



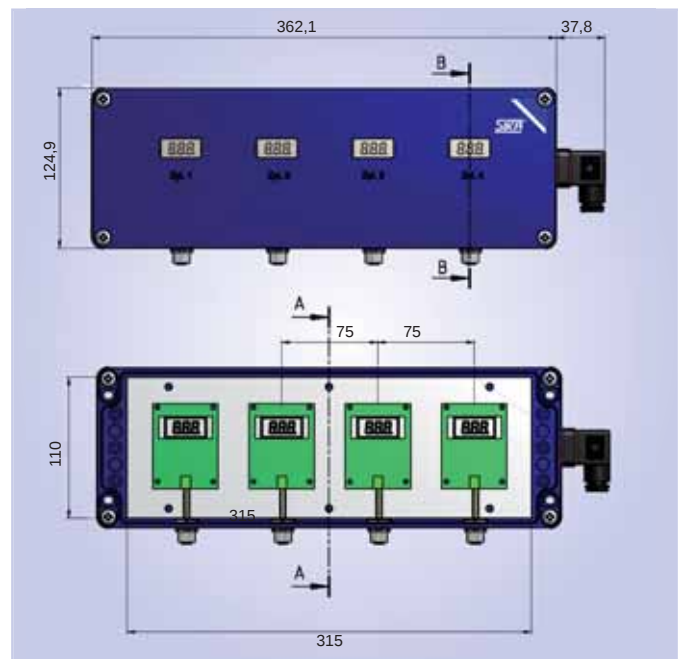
Exhaust Gas Temperature

Alarm Retrofit Set

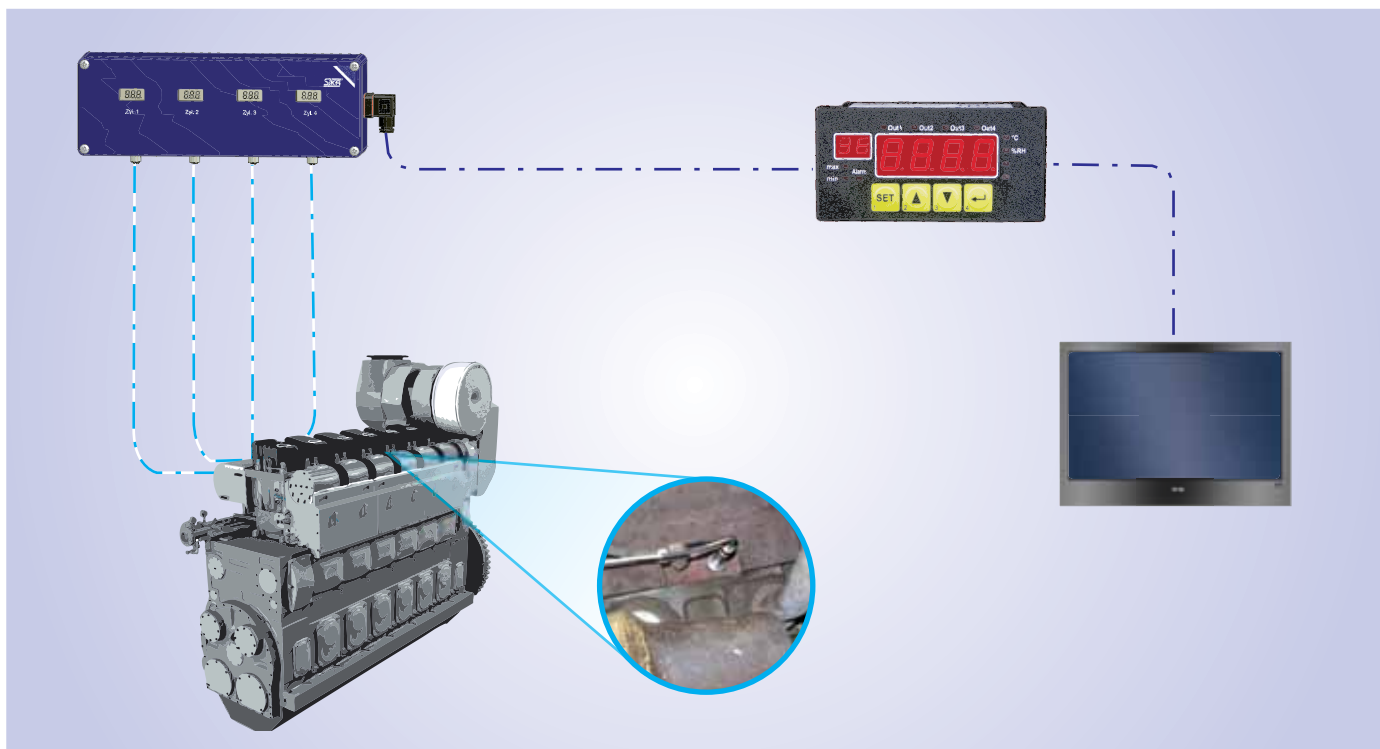
The SIKA exhaust gas temperature Retrofit Set is suitable for all auxiliary Diesel engine types. Installation with on-board equipment is possible without problems. The integrated bus system sends the temperature values of each cylinder through an easy-to-install cable to the control room. The display fitted there sends the temperature values on to the ship's control system and will sound an alarm if the exhaust gas values are critical. All that is needed to put together a set are the number of cylinders, the mechanical dimensions of the sensor and the cable length.

Advantages at a glance

- Universally retrofittable at a reasonable price
- Unlimited number of measuring points
- Easy to install with on-board equipment
- Bus system to transfer data



Application example for Exhaust Gas Monitoring



Contact us for a customised offer for your engine type.

Measuring 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.

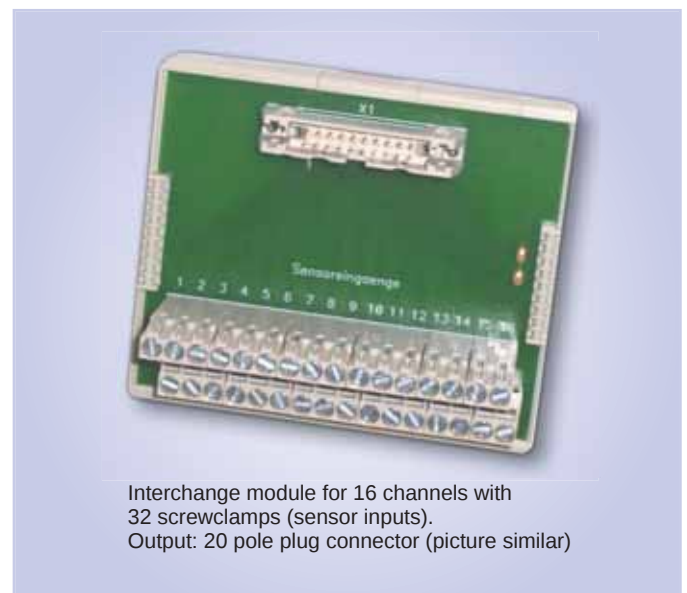
The TS 31000 is equipped with a micro controller for the complete control as well as for the linearisation of the different types of thermocouples and the cold junction sensors.

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	
Number of measuring inputs	16 or 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 mm



Your Personal Notes

This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

SIKA Test and Calibration Equipment

SIKA[®]

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



Temperature Calibrators

Temperature Calibrators TP 17 000 M

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 of the calibrator with a cycle between 1 and 2 years depending on strain.

The recalibration comprises:

- **On board:**
SIKA Recalibration Set see page 40
- **SIKA in house:**
Calibrator adjustment (only made by SIKA DKD laboratory) with output certificate

Economic and safe!

Exact temperature measurement and monitoring are "musts" in applications crucial to operational safety of machinery and industrial installations.

Regular inspection of the temperature sensors used in these applications is essential for economic and technical safety reasons and is already prescribed as obligatory in many sectors.

The temperature calibrators and calibration bath are already a part of the standard equipment of the technician in the above listed sectors. These compact devices are easy to transport and easy to operate and have all performance features required for "in-situ inspection".



For inspection of

Thermometers/SIKA thermometers

Inspection is performed by comparison of the temperature measured by the test piece and the block temperature indicated by the calibrator / calibration bath.

Temperature switches/thermostats

The test piece is inserted into the block and connected to the external transducer. The switch setting respective to the switch point is signalled by reached temperature.

Resistance thermometers and thermocouples

The inspection is performed by comparison of the temperature indicated on the external measuring instrument with the reference temperature of the calibrator or calibration bath.

Description

The calibrators of series TP 17 000 M contain an electrically controlled metal block with a bore for the insertion of the test piece. Adapter sleeves are used for test pieces with smaller diameter. The block is mounted in a heat insulated housing.

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

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



Technical data and Order code



Device type	TP 17 165 M	TP 17 650 M
Temperature range	-35 °C up to 165 °C	Ambient temp. up to 650 °C
Block temperature control	Digital PID controller, automatic fine adjustment with softstart for fan	
Tolerance	±1 °C	±1 °C
Stability	± 0.1 °C	
Block temperature display	4-digit, 2-line, 7-segment LED, 7 mm high, red and green	
Display range	-50.0 °C up to 165.0 °C	0.0 °C up to 650.0 °C
Resolution	1 °C	
Test piece fixture		
Block material	Aluminium	Brass
Block bore	Ø 28 mm	Ø 28 mm
Block depth	150 mm	
Adapter sleeves	Inside diameter between 1.5 mm and 25 mm in steps of 0.5 mm	Inside diameter between 1.5 mm and 25 mm in steps of 0.5 mm
General data		
Power supply	90...240 VAC, 50/60 Hz	230 VAC, ±10 %, 50/60 Hz
Power consumption	approx. 400 VA	approx. 1000 VA
Dimensions L x W x H	approx. 210 x 380 + 50 x 300 mm	approx. 150 x 330 + 70 x 270 mm
Weight	approx. 10.0 kg	approx. 7.5 kg
Options		
Accessories	Aluminium transport case	Aluminium transport case, nylon service case
Power supply	×	115 VAC, ±10 %, 50/60 Hz
Certificates	DKD-Certificates (acc. guideline DKD-R5-4), SIKA certificate	
Engineering unit	Display of temperature in °F	
Order codes		
SIKA Order code	EP17165M281500	EP17650M281500
ISSA-Code	61.187.01	61.187.21
IMPA-Code	65 25 03	65 25 05

Pressure Calibrators

Precision Pressure Calibrator, Series PM

Pneumatic and hydraulic pressure calibrators of series PM distinguish 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 IP68. Power is supplied by batteries or rechargeable 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.

Technical Data			
Type	P 40.2	P 60	P 700.1
Pressure Medium	air		pure water or hydraulic oil
Pressure Range	Vacuum -0.95 bar Pressure 40 bar	Vacuum -0.95 bar Pressure 60 bar	with pure water 0...400 bar with hydraulic oil 0...700 bar
Pressure connection - References - Device under test	1/4" BSP 1/4" BSP with quick-coupling and pressure hose (1 m)		3/8" BSP female 1/4" with quick-coupling and pressure hose (1 m)
Adapter set	1/8" BSP, 1/4" BSP, 3/8" BSP, 1/2" BSP, NPT 1/8", NPT 1/4", NPT 1/2" M 12x1.5, M 20x1.5 and 1/8" BSP male, 1/4" BSP male		
Set of seals	flat seals (Teflon) and O-rings		
Dimensions - Pump with pressure hose - Pump with accessories in case	approx. 240 x 170 x 50 mm approx. 450 x 370 x 110 mm		approx. 236 x 159 x 70 mm approx. 360 x 320 x 130 mm
Weight - Pump with pressure hose - Pump with accessories in case	approx. 1.1 kg approx. 4.2 kg		approx. 1.8 kg approx. 4.8 kg



Combinations

	 Reference E (0.5% FS / Range: 0...350 bar) 	 Reference D (0.1% FS / Range: 0...700bar) 
 P 40.2	PM 40.2 E (40 bar) 0.5 % FS	PM 40.2 D (40 bar) 0.1 % FS
 P 60	✕	PM 60 D (60 bar) 0.1 % FS
 P 700.1	PM 700.1 E (350 bar) 0.5 % FS	PM 700.1 D (350 bar) 0.1 % FS (700 bar) 0.1 % FS

All hand-held pressure pumps and reference gauges can be combined for different measuring ranges, resolutions and accuracy classes, as outlined above.

Order code

Type	SIKA Order code	ISSA-Code	IMPA-Code
References			
D	Measuring range -1...40 bar Resolution 0.01 bar	EME8REF-D-0030	✕
D	Measuring range -1...60 bar Resolution 0.01 bar	EME8REF-D-0060	
D	Measuring range 0...350 bar Resolution 0.1 bar	EME8REF-D-0350	
D	Measuring range 0...700 bar Resolution 0.2 bar	EME8REF-D-0700	
E	Measuring range [bar] -1...40 bar Resolution 0.01 bar	EME8REF-E-0030	
E	Measuring range 0...350 bar Resolution 0.1 bar	EME8REF-E-0350	
Pressure pumps			
P 40.2 (pneumatic)	EPPM0400BL0000		65 15 84 - 65 15 91
P 60 (pneumatic)	EPPM0600BL0000		
P 700.1 (hydraulic)	EME8P700100000		

Recalibration Set for Temperature and Pressure Calibrators

All your Calibration Equipment always available on board!

With dry block temperature calibrators of the TP 17000 M series and the pressure calibrators of the PM series, the vessel have necessary calibrated test equipment according to SOLAS and DNV on board. According to these regulations the test equipment for temperature and pressure must be recalibrated.

Because of this we are able to offer our SIKA recalibration set. Including a reference thermometer MH 3710 for standard calibration requirements or MH 3750 for highest accuracy requirements. With the high temperature probe TF650-300-6, you can measure the actual accuracy of the dry block calibrator. For precision pressure measurement we offer the SIKA pressure reference type D. We deliver the complete equipment in a robust case including all necessary certificates.

Benefits

The advantage is that the test equipment doesn't have to be returned to SIKA. It can be left on board and the crew can make the recalibration on their own. Checking the recalibration set is very easy because only the small case has to be returned once a year.

Procedures

Recalibration of temperature calibrators is done with Recalibration Instrument type MH3710 or MH3750 and Temperature Sensor type TF650-300-6. Recalibration of Pressure Calibrators is done with Recalibration Instrument type D. Every calibrator has to be calibrated to 4 measuring points. The Recalibration Set measures the temperatures of the heating block or the pressure of the pressure calibrator and you have to place the measured values on record.

Content

Temperature Reference MH

in combination with Temperature Sensor TF

Measuring input:	Pt100
Measuring range:	-50.00...650.0 °C
Resolution up to:	0.1 °C
Miscellaneous:	min./max.-memory, hold function, auto-off

MH 3710 (Standard-Set)

- Accuracy 0.3% FS

MH 3750 (Premium-Set)

- integrated alarm and data logger function
- User-specific characteristic curve of sensor
- Real-time clock with day, month and year
- Measured value memory 16200 Accuracy < ±0.2 °C

Sensor TF 650-300-6

High-precision temperature sensor suitable for MH 3710 and MH 3750 long-time temperature stable

Measuring range:	-50...650 °C
Sensor:	stainless steel tube D = 6 mm, L = 300 mm
Cable / Handle:	PVC cable (1 m) with 4-pin Mini-DIN-plug

Pressure Reference Type D

High-precision digital manometer with versatile pressure measuring instrument.

- µC based with internal EEPROM
- piezoresistive pressure transducer
- pressure- and temperature tested
- min./max.-memory, hold function, auto-off

Pressure ranges	-1...40 bar 0.01 0...350 bar 0.1 0...700 bar 0.2
------------------------	--

Accuracy < ±0.1 % FS

Temperature range 0...50 °C

Protection IP65



Certificates

SIKA will issue all necessary certificates so that you are able to fulfill the official requirements.



Order code

	Range	Accuracy	Model		SIKA Order code
Standard Recalibration Set					
Set 1	650 °C	0.3% FS	hand held instrument temperature reference sensor certificate temperature (2 points)	MH 3710 TF650-300-6	EME8RCS-SEF001
	40 bar	0.1% FS	pressure reference certificate pressure (2 points)	Ref D (40)	
	transport case		GKK3600-RCS		
Set 2	650 °C	0.3% FS	hand held instrument temperature reference sensor certificate temperature (2 points)	MH 3710 TF650-300-6	EME8RCS-SEF002
	700 bar	0.1% FS	pressure reference certificate pressure (2 points)	Ref D (700)	
	transport case		GKK3600-RCS		
Premium Recalibration Set					
Set 3	650 °C	0.03% FS	hand held instrument temperature reference sensor special linearisation certificate temperature (4 points)	MH 3750 TF650-300-6	EME8RCS-SEF003
	40 bar	0.1% FS	pressure reference certificate pressure (2 points)	Ref D (40)	
	transport case		GKK3600-RCS		
Set 4	650 °C	0.03% FS	hand held instrument temperature reference sensor special linearisation certificate temperature (4 points)	MH 3750 TF650-300-6	EME8RCS-SEF004
	700 bar	0.1% FS	pressure reference certificate pressure (2 points)	Ref D (700)	
	transport case		GKK3600-RCS		

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 built-in pressure gauges allow a reliable statement about the accuracy and is therefore decisive to the quality of operations. The connection of digital pressure reference P-HP will be realized 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 hoses and will be supplied in a service case.

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

High pressure calibration set applications

- Hydraulic power unit e.g. IOPmarine (1)
- Fuel-injector test rig e.g. IOPmarine (2)



Technical data	
Display	Multifunction LCD 20 x 60 mm
Pressure range	0...2500 bar
Pressure media	special hydraulic oil
Tolerance	±0.1 % FS ±1 digit
SIKA Order code	EME8AEB23HP2K0



1



2

Hand Held Devices

Series MH - for temperature and pressure



The handy and reliable instruments of the MH range are used for measuring and recording humidity, temperature or pressure. The MH range is very flexible and is equally suitable for simple measurements and special applications.

Sensors and probes

The high accuracy of the signal detection and processing is achieved by means of powerful sensors with electronic linearisation of the characteristic curve. The correct probes are available for a wide range of measuring tasks.

Operating comfort

The innovative design of the attractive housing and the advanced technology make the sensors comfortable to operate. In mobile use, all functions can be selected and carried out easily by pressing the buttons. The membrane keypad guarantees protection against dust and moisture.

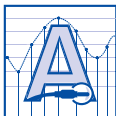
Multi-function display

As well as MIN/MAX values, hold function and the selected unit of measurement, various calculation values, such as temperature differential, pressure differential, dew point or heat capacity can also be shown on the multi-function display.



Inputs

Automatic sensor recognition through standard DIN socket provides a plug-&-play solution that is easy to install.



Outputs

Extensive alarm functions via the display, freely scalable standard signal output and buzzer and RS 485 interface.



Data storage (log functions)

Some instruments in the MH range can store data. The integrated memory records up to 16200 measurement values. The date and time is automatically added to the values. A real time clock is integrated for this purpose.

Two **log functions** are available:

- In the STORE mode, data is transferred by means of pressing a button and 99 records can be stored. The values stored are shown directly on the display.
- In CYCLE operation, values are recorded automatically at a pre-programmed interval. 1800, 2700 or 5400 records can be stored. The stored values are shown on a PC.



PC-Interface

To transfer the measurement values and stored values to a PC, the majority of the MH instruments are fitted with a serial interface.

The EBS9M software packages are available with extensive recorder and display functions, as is the SOFT3050 for evaluation of the logged and alarm values. Process sequences can then be monitored and analysed clearly using the measurement procedures recorded and visualised, and all data can be exported into standard programs (e.g. Excel).



Alarm & time displays

A visual and acoustic warning signal indicates when measurements exceed or fall below a programmed alarm point. Transmission via PC is also possible. All data can be displayed with the year and date, thanks to the real time clock.



User-defined characteristic curve MH3750

With this function, customer-specific curves can be used, alongside the standard calculation of the resistance/temperature characteristic curve in compliance with EN60751.

The MH3750 has a very high accuracy of measurement. In order to be able to exploit this high degree of accuracy, appropriate high-quality temperature sensors must be used. Various standard classes of accuracy are available for this purpose.

For applications that require a very high degree of accuracy which is higher than the accuracy of the sensor itself, it is recommended that the sensor be calibrated to the MH3750 by means of a user-defined characteristic curve.



Explosion protection

Hand held pressure measuring devices and pressure sensors are available in EXI versions (Ex ib IIC T4-03ATEX0136X).

Series MH - for temperature



MH 175 / MH 3750



MH 3710 / MH 1150

Technical data				
Type	MH 175	MH 3710	MH 3750	MH 1150
Measurement input	Pt1000	Pt100		TC-K
Measuring ranges	-70.0...199.9 °C	-199.99...199.99 °C 200.0...850.0 °C		-50...1150 °C
Resolution	0.1 °C	0.01°C / 0.1 °C autorange		1 °C
Units	°C	°C / °F		°C
Display	3 ½ -digit	2 x 4 ½ -digit		3 ½ -digit
Linearisation	Offset/Slope	Offset/Slope	Offset/Slope 50 supporting points	Offset/Slope
Inputs	1	1	1	1
SIKA Oder code	EME8GMH1750000	EME8GMH3710000	EME8GMH3750000	EME8GMH1150000
ISSA-Code	61.176.01	×	×	×
IMPA-Code	65 18 11	×	×	×



MH 1170



MH 3210 / MH 3230 / MH 3250

Technical data				
Type	MH 1170	MH 3210	MH 3230	MH 3250
Measurement input	TC-K	TC-K/J/S/T/N		
Measuring ranges	-65...199.9 °C 200...1150 °C	-199.9...199.9 °C 200...1750 °C		
Resolution	0.1°C / 1 °C	0.1°C / 1 °C		
Units	°C / °F	°C / °F		
Display	3 ½ -digit	2 x 4 ½ -digit		
Linearisation	Offset/Slope	Offset		
Inputs	1	1	2	2
SIKA Oder code	EME8GMH1170000	EME8GMH3210000	EME8GMH3230000	EME8GMH3250000
ISSA-Code	x	x	x	x
IMPA-code	x	x	x	x

Series MH - for pressure



MH 3161 / MH 3181



MH 3111 / MH 3151 / MH 3156

Technical data

Type	MH 3161	MH 3181	MH 3111	MH 3151	MH 3156
Measurement input	Internal Sensor		External Sensor		
Measuring ranges	-1...2000 mbar		-1...10 bar 0...400 bar		
Resolution	0.001 mbar		0.001 mbar / 10 mbar		
Units	mbar / bar / KPa / MPa / mmHg / PSI / mH2O				
Display	2 x 4 ½ -digit				
Linearisation	Offset/Slope		Offset/Slope		
Inputs	1	1	1	1	2
SIKA Oder code	EME8GMH316107	EME8GMH318107	EME8GMH3111000	EME8GMH3151000	EME8GMH3156000
ISSA-Code	x				
IMPA-Code	x				

Temperature and Pressure Sensors

Pt1000 measurement sensor for MH 175 Range: -70...200 °C, L = 100 mm, D = 3 mm

Type	SIKA Order code	ISSA-Code	IMPA-Code
Standard sensor GTF 175 (Fig. 1)	EME8GTF175000G	61.178.01	651815
Spike sensor GES 175 (Fig. 2)	EME8GES175000G	61.178.02	651816
Surface sensor GOF 175, head = 4 mm (Fig. 3)	EME8GOF175000G	61.178.03	651817
Air/gas sensor GLF 175, head = 6 mm (Fig. 6)	EME8GLF175000G	61.178.04	651818

Pt100 measurement sensor for MH 3710 and MH 3750 Range: -50...400 °C, L = 150 mm, D = 3 mm

Type	SIKA Order code	ISSA-Code	IMPA-Code
Standard sensor GTF 401 (Fig. 1)	EME8GTF401000G	61.178.10	651821
Spike sensor GES 401 (Fig. 2)	EME8GES401000G	61.178.11	651822
Surface sensor GOF 401, head = 4 mm (Fig. 3)	EME8GOF401000G	61.178.12	651823
Air/gas sensor GLF 401, head = 6 mm (Fig. 6)	EME8GLF401000G	61.178.13	651824

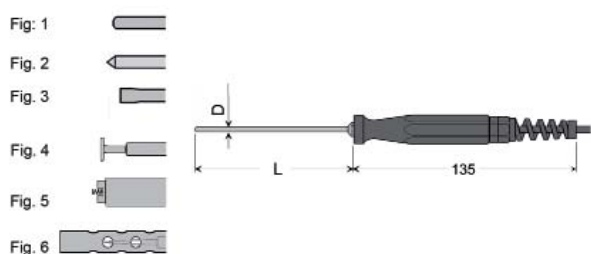
NiCr-Ni measurement sensor for MH 1150, MH 1170, MH 3210, MH 3250 and MH 3250

Type	Range	L [mm]	D [mm]	SIKA Order code	ISSA-Code	IMPA-Code
Standard sensor GTF 900 (Fig. 1)	-65...1000 °C	130	3	EME8GTF401000G	61.178.10	651826
Spike sensor GES 900 (Fig. 2)	-65...1000 °C	130	3	EME8GES401000G	61.178.11	651827
Inconel sensor GTF 1200/300 (Fig. 1)	-65...1150 °C	300	3	EME8GOF401000G	61.178.12	651828
Surface sensor GOF 130 CU (Fig. 4)	-65...500 °C	130	3 (head = 4)	EME8GLF401000G	61.178.13	651830
Surface sensor GOF 130 (Fig. 5)	-65...900 °C	130	8	EME8GOF130000G	61.178.35	651831
Air/gas sensor GLF 130 (Fig. 6)	-65...600 °C	130	3 (head = 6)	EME8GLF130000G	61.178.40	651832

Piezoresistive pressure sensor for aggressive media
PVC cable (1 m) with mini-DIN plug, fitting: st.st. 1/4" BSP 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



Infrared-Temperature Hand Held Instruments

Hand Held Measuring Instruments for non-contact temperature measurement



SemiTemp 2030 B2



SemiTemp 6080 A1 / SemiTemp 6080 B2



MaxiTemp 24 A3

Type	SemiTemp 2030 B2	SemiTemp 6080 A1	SemiTemp 6080 B1	MaxiTemp 24 A3
Configuration	LC-Display, LOW-Bat., HOLD-function, max-data-store, backlight, laser ON/OFF, tripod mount,			
	Magnet clamp, rubberized casing	Indication of average and difference, LO- and HI-Alarm (buzzer), Data store for 12 values, LOCK-function, Connection for external sensor Pt1000 / 2-wire, rubberized casing		Graphic display for 10 measurement results, LO- and HI-Alarm (buzzer)
Measuring range	-32...535 °C	-32...600 °C	-32...760 °C	-30...900 °C
Sight	2-point-laser	point-laser	point-laser	3-point-circle-laser
Optical resolution	16/1 (distance/spot size)	30/1 (distance/spot size)	50/1 (distance/spot size)	60/1 (distance/spot size)
Output	---	---	---	serial interface RS232 / 1mV / °C
Spectral range	8...14 µm (universal)			
Resolution	0.2 °C or 0.5 °F	0.1 °C or 0.2 °F		
Accuracy	±1 % of rdg. or ±3 °C			±0.75 % of rdg. or ±1 °C
Emissivity	0.95 (pre-set)	adjustable 0.30...1.00	adjustable 0.30...1.00	adjustable 0.10...1.00
Temperature units	°C / °F switchable			
Power supply	9 V block battery			2 x 1.5 V battery
Dimensions	195 x 135 x 40 mm (WxHxD)			200 x 170 x 50 mm (WxHxD)
Weight	320 g incl. battery			480 g incl. battery
Accessory	Complete with strap and service/transport case			
Type of protection	x	x	Model SemiTemp 6080 B1-IS intrinsic safety acc. Factory Mutual (no ATEX)	Model MaxiTemp 24 A3-IS as IS-version EEx ia IIC T4 TÜV 00 ATEX 1597 X
SIKA Order code	EME8RAYST250EU	EME8RAYST60BEU	EME8RAYST80BEU	EME8RAYMX2TD00
ISSA-Code	61.175.05	61.175.10	61.175.12	61.175.15
IMPA-Code	x	x	x	65 18 06

Simulators

Universal Pocket Calibrators and Multifunction Calibrators

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

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

	UC RTD	UC TC	UC mAV	MC 50
Signals				
• TC Types	×	J, K, T, R, S, B, C, U, L, N, E	×	J, K, T, R, S, B, C, U, L, N, E
• RTD	Pt50, Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni1000, Cu10, Cu50	×	×	Pt50, Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni1000, Cu10, Cu50
• Ω	Resistance 0...400 Ω, 0...4000 Ω	×	×	Resistance 0...400 Ω, 0...4000 Ω
• mA	×	×	Current 0(4)...20 mA, 25 mA	Current 0(4)...20mA, 25 mA
• mV	×	Voltage 0...100 mV	×	Voltage 0...100 mV
• V	×	×	Voltage 0...10 V, 25 V, 50 V	Voltage 0...10 V, 25 V, 50 V
• Hz	×	×	×	1...20 kHz
Features	Data logging function via flash memory for 10.000 measured values. Graphic and tabular display of measured values		×	×
Accuracy	±0.012 % of rdg. +K	±0.020 % of rdg. +K	±0.015 % of rdg. +K	±0.017 % 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	6 digits
SIKA Order code	EME8A0CRTD000	EME8A0UC0TC000	EME8A0UCMAV000	EME8A0MC050000



Your Personal Notes

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Gas Detection Equipment



Portable Gas Detectors

SHIPSURVEYOR



The new SHIPSURVEYOR instrument is designed to provide a solution for all your safety monitoring and inerting marine application requirements. With 7 models to choose from, this extremely versatile instrument complies with international marine regulations for Confined Space Monitoring, Inerting, Pre-entry Testing, Tank Cleaning and many other marine applications in vessels such as LNG / LPG Tankers, oil tankers, cargo vessels as well as container vessels

Features

- Easy to use / low maintenance instrument fully certified to MED ☉
- Infrared (IR) technology for inerting or purging operations
- Ability to enter up to 300 unique user identified location areas on a vessel and record gas values detected in each area
- Integral pump capable of drawing a sample from 30 meters
- Selectable dual mode operation:
 - Confined Space Monitor (CSM) or
 - Combustible Gas Indicator (CGI)
- Rugged impact resistant carbon impregnated polypropylene casing
- LCD with automatic backlighting in poor ambient lighting conditions. All gas readings displayed together with operational and status information.
- Complete with Data Downloading and FlexiCal (Calibration) software.
- Innovative range of accessories specifically designed to support this specialised marine instrument.

Technical data			
Measuring Ranges	0...100 % LEL (Infrared) 0...100 % Volume Gas (Infrared) 0...25 % Oxygen (O ₂) 0...100 ppm Hydrogen Sulphide (H ₂ S) 0...20 % Carbon Dioxide (CO ₂) Infrared 0...1000 ppm Carbon Monoxide (CO)		
Display	LCD with backlighting		
Resolution	LEL	0...100 %	1 %
	Vol Gas	1 %	1 %
	Oxygen	0...21 % 21...25 %	0,1 % 1 %
	Hydrogen Sulphide	0...100 ppm	1ppm
	Carbon Dioxide	0...5 % 5...20 %	0,1 % 0,5 %
	Carbon Monoxide	0...1000 ppm	1ppm
Alarms	Highly visible flashing LED's on display panel. Sounder in excess of 80dB(A), typically 85dB(A)		
Sampling system	Integral pump with flow fail sensor. Sample path is protected by a hydrophobic filter and automatic pump switch-off.		
Weight	1.35 kg		
Dimensions	180 x 95 x 100 mm		
Construction/ Protecting rate	Moulded polypropylene case protected to IP54		
Power supply	2 Alkaline cells, or 2 Rechargeable cells		
Battery life	2 x Alkaline 20 Hrs. 2 x Rechargeable 8 Hrs.		
Environment	Temperature limits -20...50 °C (-4...122 °C) Humidity: 0...100 % R.H. non-condensing		
Certification	ATEX II 2 G Exd ia IIB T3 Gb (-20 °C < Tamb < 50 °C) IEC Ex d ia IIB T3 (-20 °C < Ta < 50 °C)		



MED (0038/YY)
- Module B&E



Order code

All instruments are supplied with:

- Hard carrying case
- User handbook
- Probe handle with dust and water filters
- 1m conductive tubing with quick connect
- 15cm probe
- Neck/Shoulder and waist harness
- Hex driver, 10 x dust filters
- Quick pp guide
- Calibration certificate
- Configuration report
- Data downloading package
c/w software & IrDA adapter
- Software CD & Calibration software (Flexical)



Instrument carrying case and accessories	SIKA Order code
Shipsurveyor 1 LEL / VOL	GWS100021
Shipsurveyor 2 LEL / VOL / O2	GWS100022
Shipsurveyor 3 LEL / VOL / O2 / H2S	GWS100023
Shipsurveyor 4 LEL / VOL / O2 / CO2	GWS100024
Shipsurveyor 5 LEL / VOL / O2 / CO2 / CO	GWS100025
Shipsurveyor 6 LEL / VOL / O2 / H2S / CO	GWS100026
Shipsurveyor 7 O2 / CO2	GWS100027
Note: The default calibration gas is butane - If another calibration gas is required i.e. methane, propane or pentane please specify when ordering.	
Accessories	
Neck/Shoulder harness	GZS200370
Waist harness	GZS200371
Hydrophobic (water) filter	GZS200358
Cotton (dust) filter - box / 10	GZS000077
Sample line adaptor	GZS200688
10 m conductive sample line with waist harness connector	GZS100132
Clear sample line per metre	GZS200712
35 cm plastic probe	GZS300427
50 cm stainless steel probe	GZS200287
Rechargeable option kit (Including base, power supply and batteries)	GZS100110
Note: The waist harness connector is secured onto the waist harness to take the weight of the sample line. It has quick connection fittings.	

Hand Held Gas Detectors

V!SA Series

The robust and accurate portable gas detectors, the V!SA and V!SA 2 provide unrivalled protection in confined space applications with audible and visual alarms in the event of exposure to flammable or toxic gases.

V!SA - the confined space monitor

Detecting and displaying up to 5 gases simultaneously using „plug and play“ sensor technology, the V!SA is suitable for a host of applications in a variety of industries using infra-red, PID and catalytic sensors. Up to 13 different gas sensors are available to make sure to get the best solution.

Pre-entry checking can be carried out with the optional internal sampling pump, and diffusion operation ensuring maximum battery life in confined spaces.

V!SA 2 - low cost confined space monitor without pump

A robust and accurate portable gas detector, the V!SA 2 provides unrivalled protection in confined space applications with audible and visual alarms in the event of exposure to flammable or toxic gases. Only 4 Gas sensors are available.

Detecting and displaying up to 4 gases simultaneously using “plug and play” sensor technology, the V!SA 2 is suitable for a host of applications in the shipping industry. Diffusion operation ensures maximum battery life in confined spaces

Benefits

- Brilliant visual alarm
- Ultra loud alarm - 95 dBA
- Plug'n Play sensor technology
- Robust, Hi-Viz, Hi-Impact resistance
- International certification and conformance

Applications

- Personal safety in confined space
H₂S/O₂/CO hazards
- General safety in confined space
- Shipping - general
- Shipping - fumigant
- Permit to work systems
- Pressurised tunnelling
- Fleet auxiliary

V!SA



V!SA-2



UL 913 Class I,
Div 1 Groups ABCD

Technical data

Type	VISA	VISA 2
Measuring ranges	LEL 0-100 % O2 0-25 % H2S 0-100 ppm CO 0-1000 ppm H2S / CO 0-100 ppm/ 0-1000 ppm SO2 0-30 ppm CL2 0-10 ppm NO2 0-20 ppm NH3 0-100 ppm NO 0-300 ppm CO2 0-5 % LEL (IR) 0-100 %	0-100% 0-25 % 0-100 ppm 0-1000 ppm x x x x x x x x x
Alarms	Brilliant visual alarm 360° distinct alarm level ultra loud audible alarm, 95 dBA	
Sampling system	Diffusion operation optional internal sampling pump	Diffusion operation
Weight	0.4 kg	
Dimensions	140 x 85 x 45 mm	
Power supply	Alkaline AA cells NiMH re-chargeable pack	
Battery life	Alkaline up to 24 hrs (17 hrs with pump) Re-chargeable up to 20 hrs (14 hrs with pump)	Alkaline up to 24 hrs Re-chargeable up to 20 hrs
Environment	Temperature limits: -20...40 °C Humidity: 0 - 95% RH non-condensing	
Certification	ATEX II 2 G EEX iad IIC T3/T4 EC Ex d ia IIC T3 UL 913 Class I Div 1 Groups ABCD EC Type Examination Certificate MED	

Order codes

Complete instruments		
Type		
VISA	GWV	
Instrument configuration		
NiMH + Pump + Datalogging		4003680
NiMH + Pump		4003690
NiMH + Datalogging		4003780
NiMH		4003790
Sensors (max. 4 types)		
LEL		A
O2		D
H2S		E
CO		F
Infrared LEL		N
H2S / CO **		G

Complete instruments		
Type		
VISA-2	GWV	
Instrument configuration		
LEL / O2 - Rechargeable		400902
LEL / O2 H2S - Rechargeable		400900
LEL / O2 CO - Rechargeable		400905
LEL / O2 / H2S / CO - Rechargeable		400907
Notes		
All options include datalogging as standard. VISA 2 is only available in these configurations and as non-pumped only.		

* Chemical filter - Methane, Propane, Butane, Pentane, Hydrogen
 ** 5 gas instrument only with this dual sensor fitted

Battery Packs for VISA 2	SIKA Order code
Long duration NiMH battery pack	GSV400548

T.ex Single Gas Detector

Transportable Single Gas Detector

Available in oxygen, hydrogen sulphide and carbon monoxide versions, this instrument offers maintenance free gas detection warranted for the life of the instrument.

Bump test and calibration stations are available that enable quick gas verification tests for the operator with the added benefit of printed calibration certificates.

Features

- Visible
- Audible
- Durable
- Easy to handle
- One-button operation
- Replaceable, not disposable
- Long life cell & battery:
2 years T.ex O2, 3 years T.ex CO/T.ex H2S
- Super grip fastener, moulded into case - no screws required
- High gloss - easy clean finish

Applications

- Personal safety in confined space - H2S/O2/CO hazards
- General safety in confined space
- Confined space in gas distribution/transmission/shipping
- Permit to work systems
- Pressurised tunnelling
- Fleet auxiliary

Technical data			
Sensors	T.ex - O2	T.ex - H2S	T.ex - CO
Measuring ranges	0 to 25 %	0 - 100 ppm	0- 500 ppm
Warranty	2 years	3 years	
Resolution	O2	H2S	CO
	0 - 25 %	0 - 100 ppm	0 - 500 ppm
	0.1 %	1 ppm	1 ppm
Alarms	Audible 95dB @ 10 cm (4 in.) Vibrating alert, ultra bright LEDs		
Performance tests	EN 50104 (oxygen) EN 45544 (toxic)		
Weight	76g Toxic / 86g Oxygen		
Dimensions	85 x 55 x 29 mm		
Physical properties	Durable high gloss finish		
Power supply	Internal life-long battery: 2 years T.ex O2 3 years T.ex CO 3 years T.ex H2S		
Environment	Temperature limits: - 20 °C ...50 °C Humidity: 0 - 98% RH		
Certification	ATEX II 1 G Ex ia IIC T4 UL 913 Class I, Div 1 Groups ABCD EC Type Examination Certificate MED		

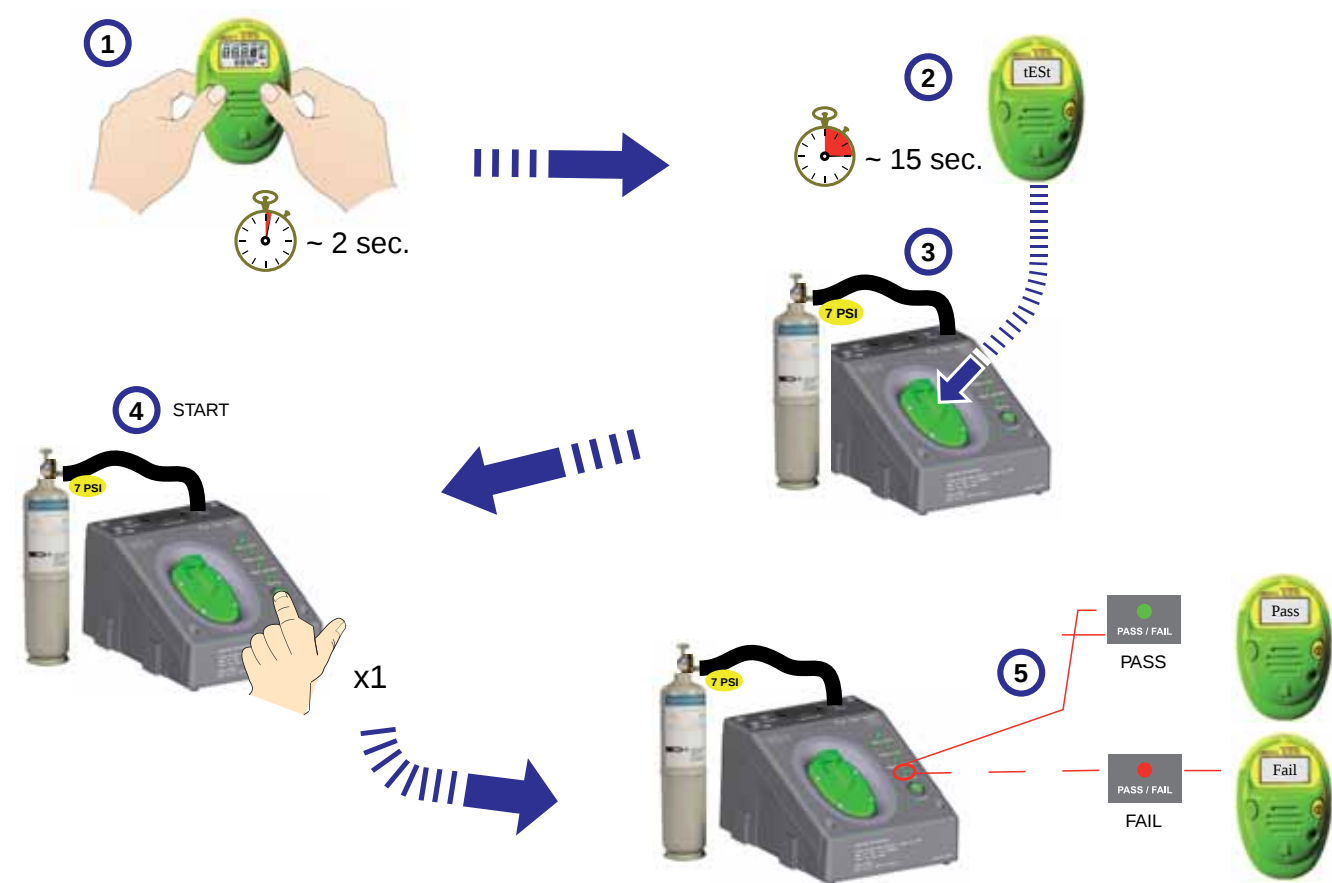


Order code

Instruments	SIKA Order code
Long life cell & battery for 2 years	
Oxygen	GWT800002
Hydrogen sulphide	GWT800003
Carbon monoxide	GWT800004
Long life cell & battery for 3 years	
Hydrogen sulphide	GWT700403
Carbon monoxide	GWT700404
Note: The instruments are supplied with user handbook and calibration certificate	

Accessories	SIKA Order code
Bump Test Station complete with power supply	GZT800121

Bump Test Station



Your Personal Notes

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Flow Measurement

SIKA[®]

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



Oval Gear Flow Meters

Oval Gear Flow Meters, Series VO

- Positive displacement flow meters, oval gear types
- Volumetric flow rate or total flow measurement
- Applicable for fluids such as lubrication oils, mineral oils, hydraulic oils, fuels, liquified gases and others
- Flanged or threaded process connections
- Two local displays are available
 - Battery powered version, approx. 5 years life circle
 - DC powered version with pulse and analog output signal

Function

The flow measuring unit consists of two highly precise meshing oval gears. The liquid flow causes the rotation of these gears. The exact liquid volume moved through the meter at one revolution is defined by the geometry of the measuring chamber.

The rotation is picked-up by a sensing element. A battery powered local display indicates the rate of flow and the total flow. The DC powered display additionally provides two output signals for further processing.

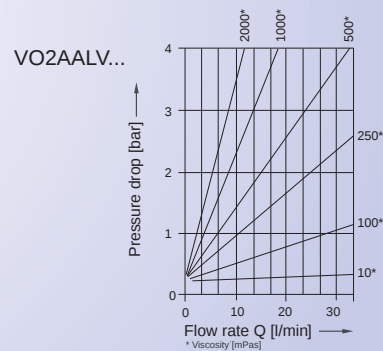
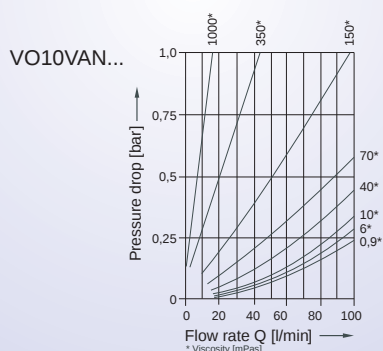
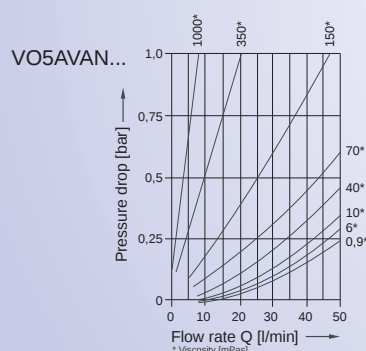
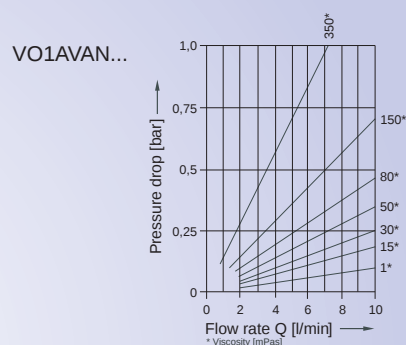
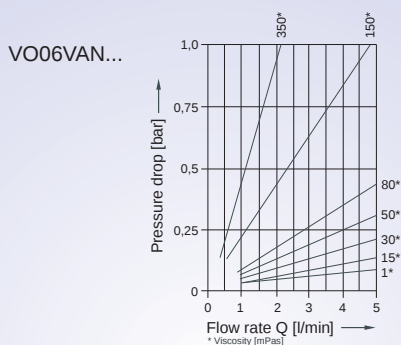
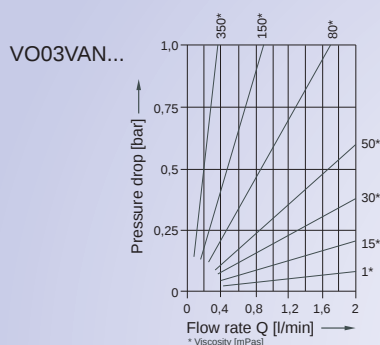


Measuring principle

Options

- Pulse output signal NPN open collector, no local display
- Individual calibration
- O-ring material FEP ($p_{\max} = 25$ bar, not applicable for VO2AALV...)

Pressure drop diagrams



Technical data and Order code

Technical data		Stainless steel version, threaded		Aluminium version, flanged	
Measuring accuracy		±1 % of reading		±1 % of reading	
Repeatability		±0.1 %		±0.1 %	
Medium temperature		-20...70 °C		-10...70 °C	
Ambient temperature		-20...70 °C		-20...70 °C	
Nominal pressure		PN 40		PN 16	
Viscosity range (higher viscosities on request)		1.5...150 mPas		1.5...150 mPas	
Materials					
Housing		Stainless steel		Aluminium	
Oval gears		Stainless steel		Aluminium	
O-ring		NBR		FKM	
Local display		battery powered	with signal output	battery powered	with signal output
Power supply		Build-in battery	14...24 V DC	Build-in battery	14...24 V DC
Protection class		IP65	IP65	IP65	IP65
Signal output	Analog output	×	4...20 mA	×	4...20 mA
	Pulse output	×	NPN open collector	×	NPN open collector
	Pulse rate	×	100 pulses per litre	×	100 pulses per litre
Flow range	Process connection	Order code	Order code	Order code	Order code
1...30 l/min	Flanges acc. DIN 2633	×	×	VO2AALVDF4K	VO2AALVTF4K
0.2...2 l/min	½" BSP female	VO03VANDI3K	VO03VANTI3K	×	×
0.5...5 l/min	½" BSP female	VO06VANDI3K	VO06VANTI3K	×	×
1...10 l/min	½" BSP female	VO1AVANDI3K	VO1AVANTI3K	×	×
5...50 l/min	1" BSP female	VO5AVANDI5K	VO5AVANTI5K	×	×
10...100 l/min	1" BSP female	VO10VANDI5K	VO10VANTI5K	×	×



Stainless steel version, threaded

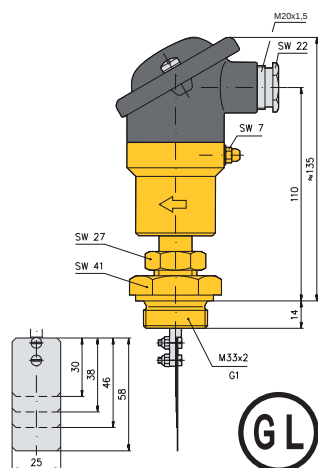


Aluminum version, flanged

Please ask for customised specifications

Paddle Flow Switches

Paddle Flow Switches for Liquids, Series VH500



- Applicable for water, oil etc.
- Insertion 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 (2 g at dry test)
- Wide set point ranges, universally applicable
- Setpoint adjustment by paddle size selection and by adjustment screw
- Micro switch with high contact rating
- Approved by Germanischer Lloyd

Technical data

Max. medium temperature	100 °C			
Max. ambient temperature	85 °C			
Change over contact, max. contact rating	24 VDC, 5 A resistive load, 4 A inductive load 60 VDC, 1 A resistive load 0,5 A inductive load 250 VAC, 10 A resistive load, 10 A inductive load (pf 0.75)			
Protection class	IP54			
Material	Brass			
Max. pressure rating	6 bar		10 bar	
Max. test pressure (2 min.)	10 bar		15 bar	
Germanischer Lloyd Certificate No.	89 824-94 HH		94 970-10 HH	
Thread connection	1" BSP	M 33x2	1" BSP	M 33x2
Order code	VH500NI3451R41	VH500NM3451M41	VH500RI3451R41	VH500RM3451M41

Set point ranges

Size of pipe section*	Paddle to select	Set point ranges [m3/h]**, water (20 °C, up to 2 bar)			
		VH500N...		VH500R...	
		ON	OFF	ON	OFF
DN 25	25 x 30 mm	1.10...1.25	1.05...1.20	1.60...1.80	1.40...1.55
DN 32	25 x 38 mm	1.70...2.05	1.60...1.95	2.45...2.60	2.00...2.25
DN 40	25 x 46 mm	2.20...2.55	2.10...2.45	2.55...2.80	2.05...2.35
DN 50	25 x 58 mm	3.25...3.85	3.15...3.75	3.90...4.25	3.20...3.55

* Installation into tees acc. EN 10242

** Higher set points achievable by use of smaller paddle sizes.

Tolerance of the set point ranges: ±15 %, set points for bigger pipe sizes on request



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Our Production and Sales Range



Flow Sensors without moving Parts



Turbine Flow Sensors



Flow Switches



Pressure Gauges and Pressure Sensors



Industrial Thermometers



Electronic Digital Thermometers, Dial Thermometers



Measuring Instruments



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Subject to technical modification

