Bimetal thermometer, Industrial version, Back connection, Class 1.6 or 1.0

TB-HW Bi002

Case: Steel zinced
Optional: Stainless steel AISI 304

Bezel: Steel nickel plated
Optional: Stainless steel AISI 304

Protection class: IP 43

Dial: Aluminium, white varnished
lettering and graduation black
Optional: Red mark
Optional: Imprint
Optional: Double scale °C/°F

Pointer: Aluminium, black
adjustable at end of stem
Optional: Silicone damped

Window: Instrument glass
Optional: Perspex window
Optional: Max. drag pointer (diam. 63-160)
Optional: Max./Min. drag pointer (diam. 63-160)
Optional: Red mark pointer (diam. 63-160)

Stem: G 1/2 B brass detachable with fixing screw
L = 28 / 45 / 50 / 63 / 100 mm solid A/F 21
Other lengths multi part soldered A/F 21
Optional: other connections

Connection: Backwards

Measuring range: 0-120°C
Optional: see table below

Accuracy class: 1,6
Optional: Accuracy class 1
(then the type number changes from 2XXX into 3XXX)
Optional: Works test certificate

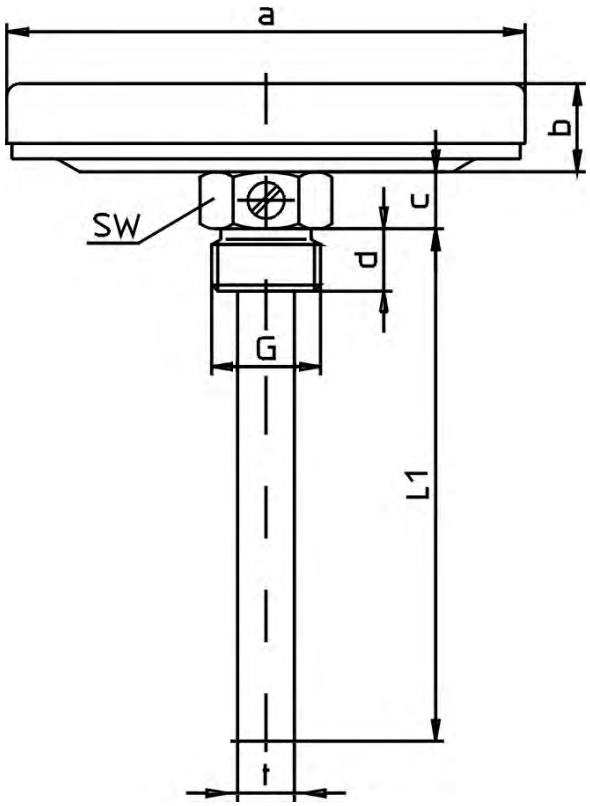
Diam.:		mm	Type number: 34	50	63	80	100	160
Stem	28	mm	2030	2050	2060	2080	2100	2160
	45	mm	2031	2051	2061	2081	2101	2161
	50	mm	2032	2052	2062	2082	2102	2162
	63	mm	2033	2053	2063	2083	2103	2163
	80	mm	2034	2054	2064	2084	2104	2164
	100	mm	2035	2055	2065	2085	2105	2165
	120	mm	2036	2056	2066	2086	2106	2166
	160	mm	2037	2057	2067	2087	2107	2167
	200	mm	2038	2058	2068	2088	2108	2168
	250	mm	2039	2059	2069	2089	2109	2169

Measuring-range	Graduation
-40 +40°C	1°
-30 +50°C	
-20 +60°C	
-20 +40°C	
-15 +45°C	
-10 +60°C	
-10 +50°C	
1) 0 -40°C	
1) 0 -50°C	
0 -60°C	
0 -80°C	
0 -100°C	2°
0 -120°C	
0 -160°C	
0 -200°C	
0 -250°C	5°
0 -300°C	
0 -400°C	10°
2) 0 -500°C	
2) 0 -600°C	

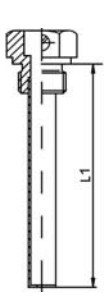
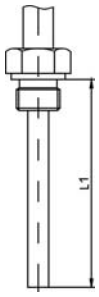
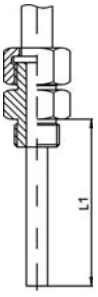
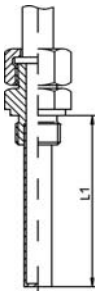
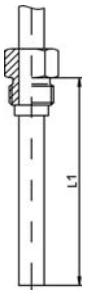
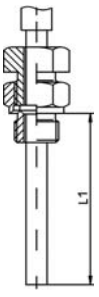
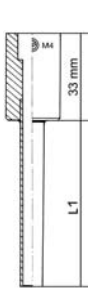
Other lengths are available!

Stem 28 mm only 0-100 and 0-120°C available!
Stem 45 mm shortest measuring span = 60°C!

1) shortest stem length 63 mm
2) stem stainless steel needed



Type	a	b	c	d	SW	G	t
2030	34	9	11	12	21	½ B	12
2050	50	12	11	12	21	½ B	12
2060	63	13	11	12	21	½ B	12
2080	80	13	11	12	21	½ B	12
2100	100	15	11	12	21	½ B	12
2160	160	19	11	12	21	½ B	12

0	1	2	3	4	5	6	9
separate pocket with male thread and fixing screw	fixed connection male thread	union nut female thread	union nut with double nipple male thread	union nut with additional thermowell acc. to DIN 43 772 form 8	turnable male thread	movable clamp connection male thread	separate pocket for welding with fixing screw
							

Dimensions and technical data are conform to current company standard.
Changes to improve our instruments will be made without preannouncement.

Bimetal thermometer, Industrial version, Bottom connection, Class 1.6 or 1.0

TB-HW Bi003

Rel. 20180710

Case: Steel zinced
Optional: Stainless steel AISI 304 (diam. 63 and 100)

Bezel: Steel chromed
Optional: Stainless steel AISI 304 (diam. 63 and 100)

Protection class: IP 43

Dial: Aluminium, white varnished
lettering and graduation black
Optional: Red mark
Optional: Imprint
Optional: Double scale °C/°F

Pointer: Aluminium, black
adjustable at end of stem
Optional: Silicone damped

Window: Instrument glass
Optional: Perspex window
Optional: Red mark pointer (diam. 63-160)

Stem: G 1/2 B brass detachable with fixing screw
L = 28 / 45 / 50 / 63 / 100 mm solid A/F 21
other lengths multi part soldered A/F 21
Optional: other connections

Connection: Vertical entry
Optional: Sidewards

Measuring range: 0-120°C
Optional: see table below

Accuracy class: 1,6
Optional: Accuracy class 1
(then the type number changes from 2XXX into 3XXX)
Optional: Works test certificate

		Type number:				
Diam.:	mm	50	63	80	100	160
Stem	28 mm	2250	2260	2280	2300	2360
	45 mm	2251	2261	2281	2301	2361
	50 mm	2252	2262	2282	2302	2362
	63 mm	2253	2263	2283	2303	2363
	80 mm	2254	2264	2284	2304	2364
	100 mm	2255	2265	2285	2305	2365
	120 mm	2256	2266	2286	2306	2366
	160 mm	2257	2267	2287	2307	2367
	200 mm	2258	2268	2288	2308	2368
	250 mm	2259	2269	2289	2309	2369

Measuring-range	Graduation
-40 +40°C	1°
-30 +50°C	
-20 +60°C	
-20 +40°C	
-15 +45°C	
-10 +60°C	
-10 +50°C	
0 -50°C	
0 -60°C	
0 -80°C	
0 -100°C	2°
0 -120°C	
0 -160°C	
0 -200°C	
0 -250°C	5°
0 -300°C	
0 -400°C	10°
1) 0 -500°C	
1) 0 -600°C	

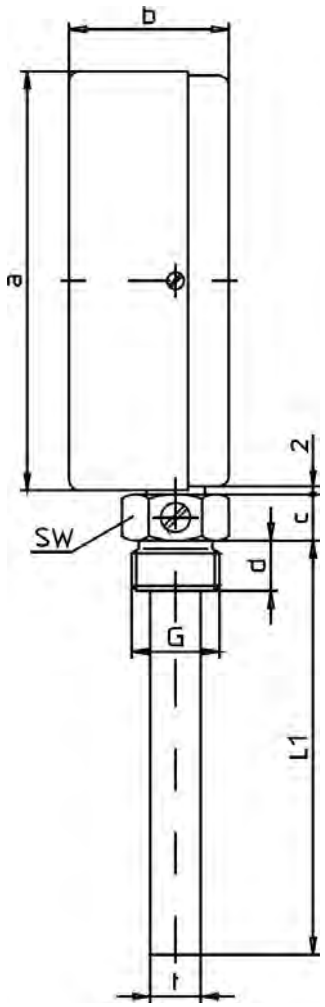
1) stem stainless steel needed

Other lengths are available!

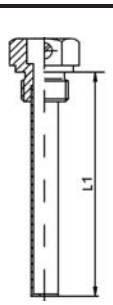
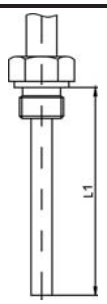
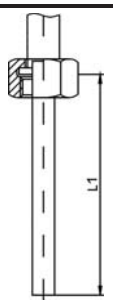
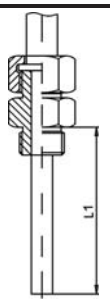
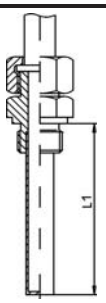
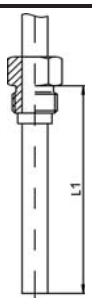
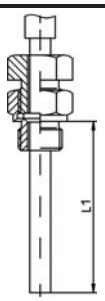
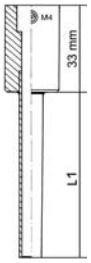
Stem 28 mm only 0-100 and 0-120°C available!
Measuring span 50 and 60°C shortest stem = 100 mm max. 200 mm!

TB-HW Bi003

Bimetal thermometer, Industrial version,
Bottom connection, Class 1.6 or 1.0



Type	a	b	c	d	SW	G	t
2250	50	35	11	12	21	½ B	12
2260	63	36	11	12	21	½ B	12
2280	80	36	11	12	21	½ B	12
2300	100	38	11	12	21	½ B	12
2360	160	38	11	12	21	½ B	12

0	1	2	3	4	5	6	9
separate pocket with male thread and fixing screw	fixed connection male thread	union nut female thread	union nut with double nipple male thread	union nut with additional thermowell acc. to DIN 43 772 form 8	turnable male thread	movable clamp connection male thread	separate pocket for welding with fixing screw
							

Dimensions and technical data are conform to current company standard.
Changes to improve our instruments will be made without preannouncement.

All stainless steel Bimetal thermometer
Back (and bottom) connection, Class 1.0

TB-HW Bi004

Rel. 20180713

Case: Stainless steel AISI 304

Bezel: Stainless steel AISI 304
Optional: Diam. 80 and diam. 100 mm with crimped ring
Optional: Diam. 80 and diam. 100 mm with crimped ring and liquid filling (IP 65)

Protection class: IP 43

Dial: Aluminium, white varnished
lettering and graduation black
Optional: Red mark
Optional: Imprint
Optional: Double scale °C/°F

Pointer: Aluminium, black
adjustable at end of stem
Optional: Silicone damped

Window: Instrument glass
Optional: Perspex window
Optional: Laminated safety glass (diam. 63-160)
Optional: Max. drag pointer (diam. 63-160)
Optional: Max./Min. drag pointer (diam. 63-160)
Optional: Red mark pointer (diam. 63-160)

Stem: G 1/2 A stainless steel AISI 303, A/F 27, with fixing screw
multi part welded, tube Ø 10 mm of AISI 316 Ti
Optional: Thread of AISI 316 Ti
Optional: other connections

Connection: Backwards
Optional: Bottom, case diam. 63 mm and 100 mm only

Measuring range: 0-120°C
Optional: see table below

Accuracy class: 1.0
Optional: Works test certificate

Diam.:	mm	**Type number:** 34	50	63	80	100	160
Stem	28 mm	2930	2950	2960	2980	3000	3040
	45 mm	2931	2951	2961	2981	3001	3041
	50 mm	2932	2952	2962	2982	3002	3042
	63 mm	2933	2953	2963	2983	3003	3043
	80 mm	2934	2954	2964	2984	3004	3044
	100 mm	2935	2955	2965	2985	3005	3045
	120 mm	2936	2956	2966	2986	3006	3046
	160 mm	2937	2957	2967	2987	3007	3047
	200 mm	2938	2958	2968	2988	3008	3048
	250 mm	2939	2959	2969	2989	3009	3049

Measuring-range	Graduation
-40 +40°C	1°
-30 +50°C	
-20 +60°C	
-20 +40°C	
-15 +45°C	
-10 +60°C	
-10 +50°C	
1) 0 -40°C	
1) 0 -50°C	
0 -60°C	
0 -80°C	
0 -100°C	2°
0 -120°C	
0 -160°C	
0 -200°C	
0 -250°C	5°
0 -300°C	
0 -400°C	10°
0 -500°C	
0 -600°C	

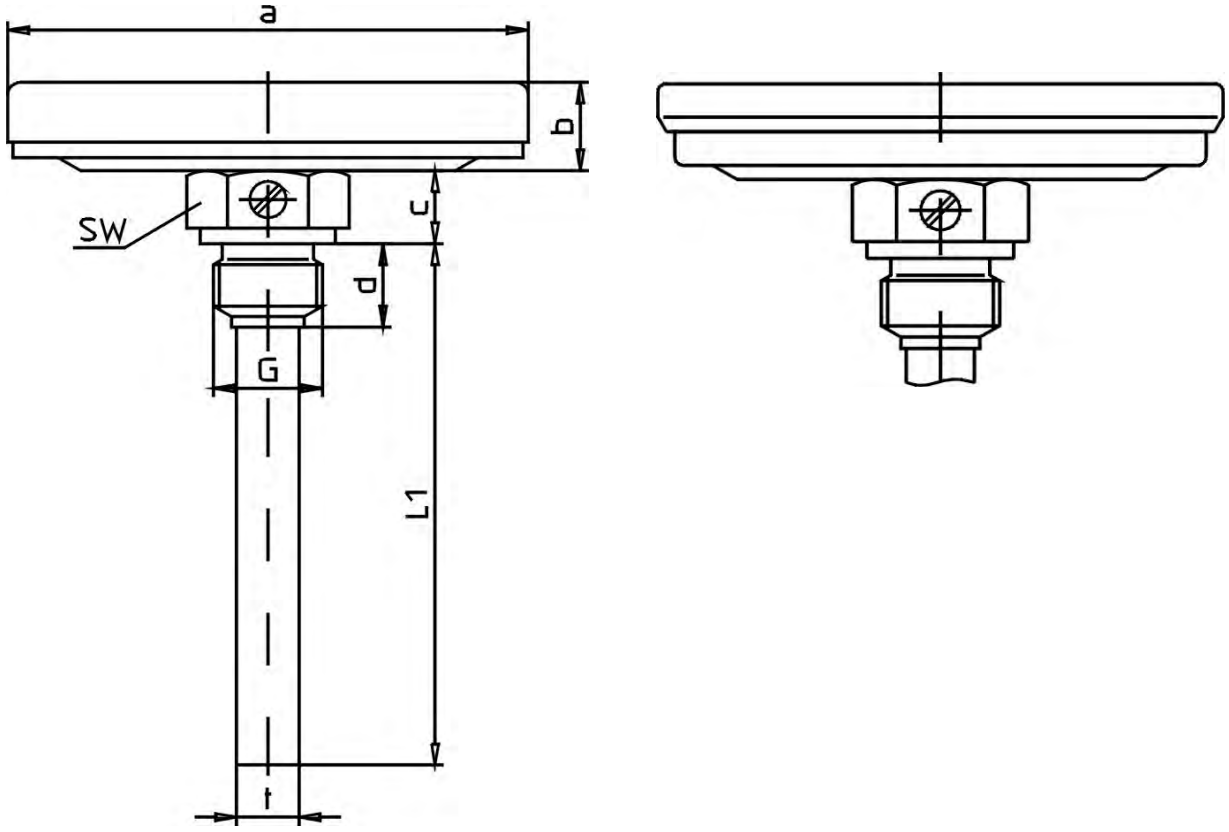
1) shortest stem length 63 mm

Other lengths are available!

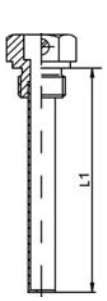
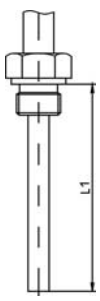
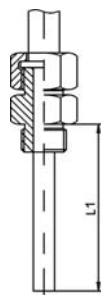
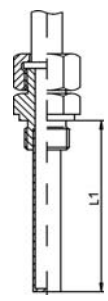
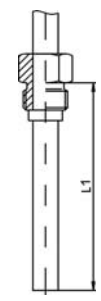
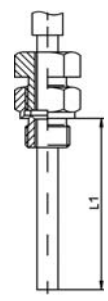
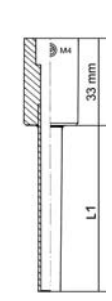
Stem 28 mm only 0-100 and 0-120°C available!

TB-HW Bi004

All stainless steel Bimetal thermometer
Back (and bottom) connection, Class 1.0



Type	a	b	c	d	SW	G	t
2930	34	9	14	14	27	½ A	10
2950	50	12	14	14	27	½ A	10
2960	63	13	14	14	27	½ A	10
2980	80	13	14	14	27	½ A	10
3000	100	15	14	14	27	½ A	10
3040	160	19	14	14	27	½ A	10

0	1	2	3	4	5	6	9
separate pocket with male thread and fixing screw	fixed connection male thread	union nut female thread	union nut with double nipple male thread	union nut with additional thermowell acc. to DIN 43 772 form 8	turnable male thread	movable clamp connection male thread	separate pocket for welding with fixing screw
							

Dimensions and technical data are conform to current company standard.
Changes to improve our instruments will be made without preannouncement.

bi-metal thermometers
standard version

TB7
DS63-80-100-125

These instruments are designed for use in food, beverage, pharmaceutical, chemical, petrolchemical processing industries. They are built to resist the most severe operating conditions created by the environment and the process medium. An Argonarc welded case / bulb strengthens the whole construction.

Functional and constructive

06.TB7

Measuring range: the C° measuring range has been marked by two "♦" stamped on the dial.
Accuracy: class 2 as per DIN 16203.
Ambient temperature: -25 / +65 ·C.
Overtemperature limit: 10% of full scale range for temperature ≤400 ·C; max 500 ·C.
Max working pressure: 15 bar (without thermowell).
Protection degree: IP 65 as per IEC 529, UNI 8896.
Process connection: AISI 303 st.st.
Bulb: AISI 304 st.st.
ø6-8 mm. for DS 80, DS 100, DS 125;
ø 6 mm. for DS 63.
Standard bulb length: 100 - 150 - 200 - 250.
Measuring element: bi-metal spiral shaped.
Welding: AISI 304 st.st. TIG.
Case: AISI 304 st.st.
Ring: AISI 304 st.st., crimped.
Window: plexiglas.
Dial: aluminium white with black markings.
Pointer: black anodized aluminium.
Window gasket: EPDM.

MEASURING PRINCIPLES

The bi-metal thermometers are built from a stainless steel tube inside of which a bi-metal helicoidal spiral is placed.
This spiral is welded to the tip of the tube and on the other side to a transmission shaft directly connected to the pointer.
The temperature vibrations create a deformation of the bi-metal which is transmitted to the pointer through a shaft rotation.

SCALE RANGES - "C"=DS63;"D"=DS80,"E"=DS100,"F"=DS125..

Tab. 1 - Single scales °C and bulb length "S"

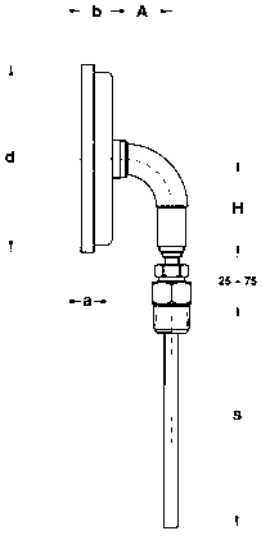
°C	DS	"S"
-20/+40	C-D-E-F	100÷250
0/+6	C-D-E-F	100÷250
0/+10	C-D-E-F	100÷250
0/+12	C-D-E-F	100÷250
0/+16	C-D-E-F	100÷250
0/+20	C-D-E-F	100÷250
0/+30	C-D-E-F	100÷250
0/+40	C-D-E-F	150÷250
0/+50	C-D-E-F	150÷250

Tab. 2 - Dual scales °C / °F and bulb length "S"

Primary °C (ext.)	Secondary °F (int.)	DS	"S"
-20/+40	-4/+104	D-E-F	100÷250
0/+6	+32/+140	D-E-F	100÷250
0/+10	+32/+212	D-E-F	100÷250
0/+12	+32/+248	D-E-F	100÷250
0/+16	+32/+320	D-E-F	100÷250
0/+20	+32/+392	D-E-F	100÷250
0/+30	+32/+572	D-E-F	100÷250
0/+40	+32/+752	D-E-F	150÷250
0/+500	+32/+932	D-E-F	150÷250

TB71
DS80-100-125

LOWER CONNECTION (code 1)

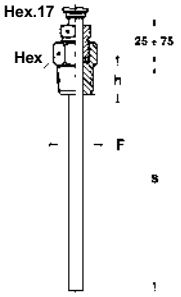


DS	a	b	d	A	H
80	8,2	17	79,5	34,5	57
100	7,4	18	109,8	34,5	57
125	6,5	16,5	129,2	34,5	57

PROCESS CONNECTION

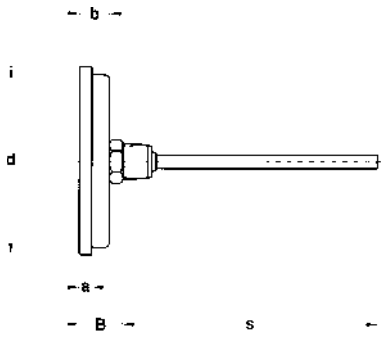
Without threaded connection (Code 0)

Sliding male and swivel nut (Code 9)



F	Code	Hex.	h
1/2" Bsp	41M	22	17
1/2" NPT	43M	22	14

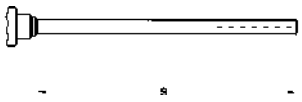
BACK CONNECTION (code 4)



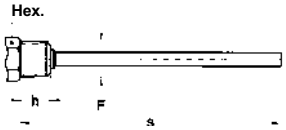
DS	a	b	d	B
63	5,8	13	67,9	21
80	8,2	17	79,5	25
100	7,4	17,7	109,8	25,7
125	6,5	16,5	129,2	24,5

PROCESS CONNECTION

Without threaded connection (Code 0)



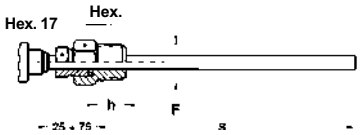
Fixed male (Code 3)



F	Code	Hex.	h
1/2"Bsp	41M	22	17
1/2"NPT	43M	22	14
1/4"Bsp(*)	21M	17	12
1/4"NPT(*)	23M	17	14

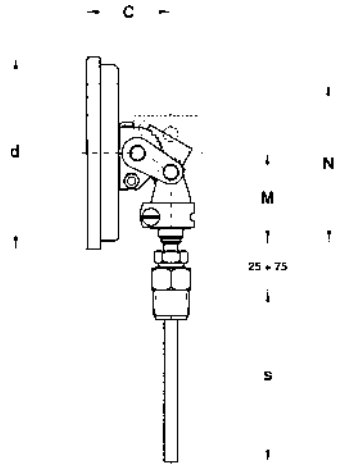
(*)DS63 only

Sliding male and swivel nut (Cod. 9)



F	Code.	Hex.	h
1/2"Bsp	41M	22	17
1/2"NPT	43M	22	14

EVERY-ANGLE CONNECTION (code 9)

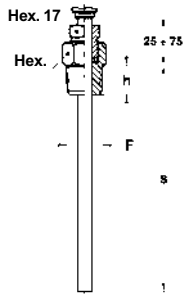


DS	d	C	M	N
100	109,8	47,7	51,5	91,2
125	129,2	46,5	51,5	90

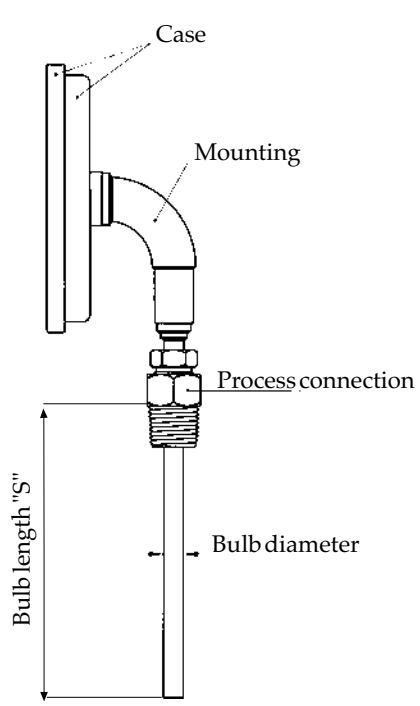
PROCESS CONNECTION

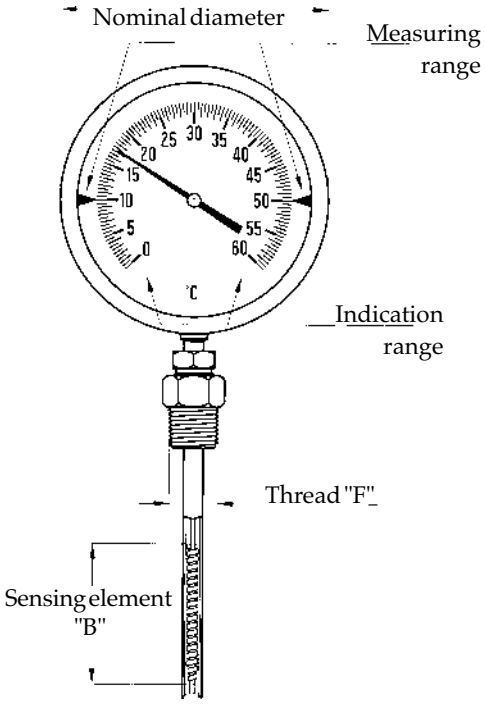
Without threaded connection (Code 0)

Sliding male and swivel nut (Code 9)



F	Code	Es.	h
1/2"Bsp	41M	22	17
1/2"NPT	43M	22	14





HOW TO ORDER

	CODE & DESCRIPTION
06	06 - thermometer section
TB	TB - bi-metal thermometer
7	7 - standard serie
4	1 - Lower connection 4 - Back connection 9 - Every-angle connection
9	0 - Without 3 - Fixed male 9 - Sliding male swivel nut
E	C - DS 63 F - DS 125 D - DS 80 E - DS 100
41M	21M - 1/4" Bsp male (connection type 3 x DS63) 23M - 1/4" NPT male (conn. type 3 x DS63) 41M - 1/2" Bsp male (connection type 3-9) 43M - 1/2" NPT male (connection type 3-9) 000 - Without connection
S5	S4 - ø 6 mm. bulb S5 - ø 8 mm. bulb
200	bulb length (mm.)
0/10 °C	see ranges tables
S63	Options S63 - bulb ø8mm. length 63 mm. for connection type 9 and ranges up to 300°C.

THERMOWELLS

Must be used on all applications where thermometer bulb is subjected to pressure, corrosive fluid or flow rate. Thermowells will make thermometer disassemble for calibration or replacement easier as the process will not be disturbed.

Thermowells available:

-thermowells with thread connection either built up type or machined from bar stock;

-thermowells with flange either built up type or machined from a bar stock;

-thermowells to be welded machined from a bar stock.

Type, material and constructive characteristics on catalogue sheet "09".

Bimetal thermometer for the Process Industry
All stainless steel, Back connection, Class 1.0

TB-HW Bi005

Rel. 20180713

Case: Bayonet fitted, stainless steel AISI 304
Optional: With liquid filling (IP 65)

Bezel: Bayonet fitted, stainless steel AISI 304
Optional: With front flange for panel mounting

Protection class: IP 54

Dial: Aluminium, white varnished
lettering and graduation black
Optional: Red mark
Optional: Imprint
Optional: Double scale °C/°F

Pointer: Aluminium, black
adjustable at end of stem
Optional: Silicone damped

Window: Instrument glass
Optional: Perspex window
Optional: Laminated safety glass
Optional: Max. drag pointer
Optional: Max./Min. drag pointer
Optional: Red mark pointer

Stem: G 1/2 A stainless steel AISI 303, A/F 27, with fixing screw
multi part welded, tube Ø 10 mm of AISI 316 Ti
Optional: Thread of AISI 316 Ti
Optional: other connections

Connection: Backwards

Measuring range: 0-120°C
Optional: see table below

Accuracy class: 1.0
Optional: Works test certificate

Specials: Instruments with sliding contacts

Diam.:	mm	Type number: 63	80	100	160
Stem	28 mm	2460	2480	2500	2560
	45 mm	2461	2481	2501	2561
	50 mm	2462	2482	2502	2562
	63 mm	2463	2483	2503	2563
	80 mm	2464	2484	2504	2564
	100 mm	2465	2485	2505	2565
	120 mm	2466	2486	2506	2566
	160 mm	2467	2487	2507	2567
	200 mm	2468	2488	2508	2568
	250 mm	2469	2489	2509	2569

Other lengths are available!

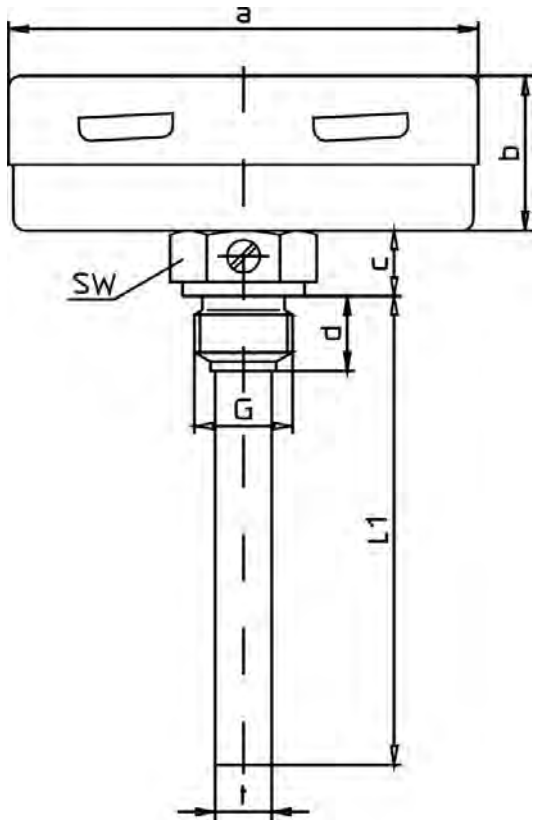
Stem 28 mm only 0-100 and 0-120°C available!

Measuring-range	Graduation
-40 +40°C	1°
-30 +50°C	
-20 +60°C	
-20 +40°C	
-15 +45°C	
-10 +60°C	
-10 +50°C	
1) 0 -40°C	
1) 0 -50°C	
0 -60°C	
0 -80°C	
0 -100°C	2°
0 -120°C	
0 -160°C	
0 -200°C	
0 -250°C	5°
0 -300°C	
0 -400°C	10°
0 -500°C	
0 -600°C	

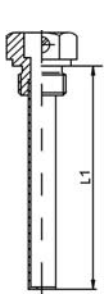
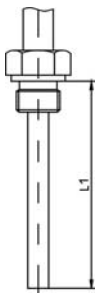
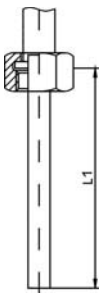
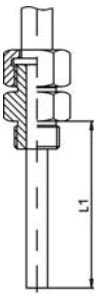
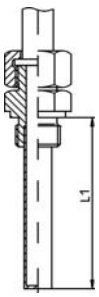
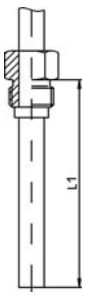
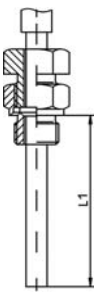
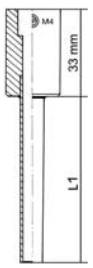
1) shortest stem length 63 mm

TB-HW Bi005

Bimetal thermometer for the Process Industry
All stainless steel, Back connection, Class 1.0



Type	a	b	c	d	SW	G	t
2460	63	27	14	14	27	½ A	10
2480	80	27	14	14	27	½ A	10
2500	100	27	14	14	27	½ A	10
2560	160	29	14	14	27	½ A	10

0	1	2	3	4	5	6	9
separate pocket with male thread and fixing screw	fixed connection male thread	union nut female thread	union nut with double nipple male thread	union nut with additional thermowell acc. to DIN 43 772 form 8	turnable male thread	movable clamp connection male thread	separate pocket for welding with fixing screw
							

Dimensions and technical data are conform to current company standard.
Changes to improve our instruments will be made without preannouncement.

Bimetal thermometer for the Process Industry
All stainless steel, Bottom connection, Class 1.0

TB-HW Bi006

Rel. 20180713

Case: Bayonet fitted, stainless steel AISI 304
Optional: with liquid filling (IP 65)

Bezel: Bayonet fitted, stainless steel AISI 304

Protection class: IP 54

Dial: Aluminium, white varnished
lettering and graduation black
Optional: Red mark
Optional: Imprint
Optional Double scale °C/°F

Pointer: Aluminium, black
Optional: Silicone damped

Window: Instrument glass
Optional: Perspex window
Optional: Laminated safety glass
Optional: Red mark pointer

Stem: G 1/2 A stainless steel AISI 303, A/F 27, with fixing screw
multi part welded, tube Ø 10 mm of AISI 316 Ti
Optional: Thread of AISI 316 Ti
Optional: other connections

Connection: Vertical entry
Optional: Sidewards

Measuring range: 0-120°C
Optional: see table below

Accuracy class: 1.0
Optional: Works test certificate

Diam.:		mm	**Type number:** 63	80	100	160
Stem	28	mm	2660	2680	2700	2760
	45	mm	2661	2681	2701	2761
	50	mm	2662	2682	2702	2762
	63	mm	2663	2683	2703	2763
	80	mm	2664	2684	2704	2764
	100	mm	2665	2685	2705	2765
	120	mm	2666	2686	2706	2766
	160	mm	2667	2687	2707	2767
	200	mm	2668	2688	2708	2768
	250	mm	2669	2689	2709	2769

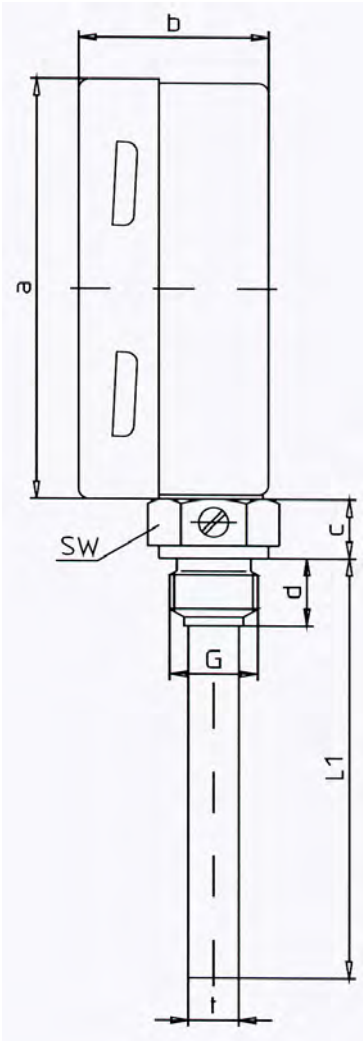
Measuring-range	Graduation
-40 +40°C	1°
-30 +50°C	
-20 +60°C	
-20 +40°C	
-15 +45°C	
-10 +60°C	
-10 +50°C	
0 -50°C	
0 -60°C	
0 -80°C	
0 -100°C	2°
0 -120°C	
0 -160°C	
0 -200°C	
0 -250°C	5°
0 -300°C	
0 -400°C	10°
0 -500°C	
0 -600°C	

Other lengths are available!

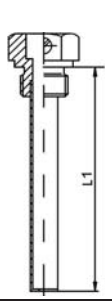
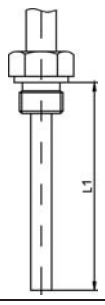
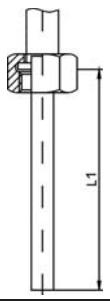
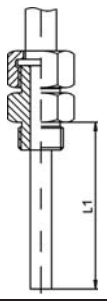
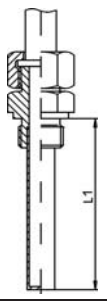
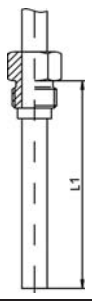
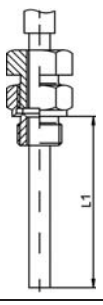
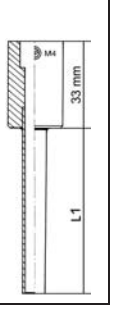
Stem 28 mm only 0-120°C available!
Measuring span 50 and 60°C shortest stem = 100 mm max. 200 mm!

TB-HW Bi006

Bimetal thermometer for the Process Industry
All stainless steel, Bottom connection, Class 1.0



Type	a	b	c	d	SW	G	t
2660	63	47	14	14	27	½ A	10
2680	80	46	14	14	27	½ A	10
2700	100	49	14	14	27	½ A	10
2760	160	48	14	14	27	½ A	10

0	1	2	3	4	5	6	9
separate pocket with male thread and fixing screw	fixed connection male thread	union nut female thread	union nut with double nipple male thread	union nut with additional thermowell acc. to DIN 43 772 form 8	turnable male thread	movable clamp connection male thread	separate pocket for welding with fixing screw
							

Dimensions and technical data are conform to current company standard.
Changes to improve our instruments will be made without preannouncement.

bi-metal thermometers
all stainless steel construction

06.TB8 DS100-125-150

These instruments are designed for use in food, beverage, pharmaceutical, chemical, petrolchemical processing industries. They are built to resist the most severe operating conditions created by the ambient environment and the process medium. An Argonarc welded case / bulb strengthens the whole construction. A leak tight fit is ensured if the instrument is filled with a dampening fluid to prevent damage due to vibration.

Functional and constructive

06.TB8 all stainless steel construction

Measuring range: the C° measuring range has been marked by two "♦" stamped on the dial. They represent the temperature span recommended for the use of instruments as per DIN 16203.
Accuracy: class 1,0 as per DIN 16203.
Ambient temperature: -25...+65 ·C.
Working temperature: continuous from -50 ·C to +450 ·C; intermittent only between 450 ·C to 500 ·C.
Overtemperature limit: 30% of full scale range for temperature ≤400 ·C; max 500 ·C.
Special overtemperature (option F02): 100% of full scale range for temperature ≤150 ·C; 50% of full scale range for temperature tra 150 ·C e 300 ·C; max. 500 ·C.
Max working pressure: 15 bar (without thermowell).
Protection degree: IP 55 as per IEC 529.
Process connection: AISI 316 st.st.
Bulb: ø 6-6,4-8-9,6 mm. AISI 316 st. st.
Measuring element: bi-metal spiral shaped.
Welding: AISI 304 st.st. TIG.
Case: AISI 304 st.st.
Ring: AISI 304 st.st. bayonet lock.
Window: glass.
Dial: aluminium white with black markings.
Pointer: micrometer adjustable.
Gasket: EPDM.

Special version

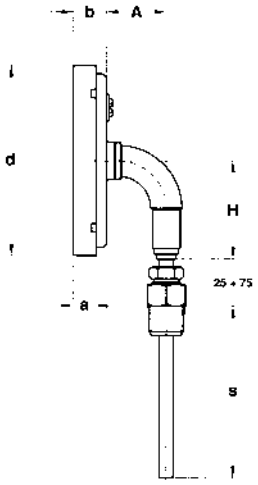
Measuring range: ·F, and double range ·C / ·F.
Protection degree: IP 65 (option E65).
Case and ring: AISI 316 st.st. (option C40).
Dampening liquid filling: glycerine 98%, silicon oil and Fluorolube (options R10-R11-R12; see table on page 4 for limit operating conditions).

MEASURING

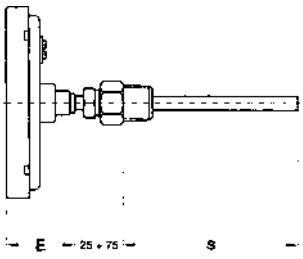
The bi-metal thermometers are built from a stainless steel tube inside of which a bi-metal helicoidal spiral is placed.
This spiral is welded to the tip of the tube and on the other side to a transmission shaft directly connected to the pointer.
The temperature vibrations create a deformation of the bi-metal which is transmitted to the pointer through a shaft rotation.

06.TB8 DS100-125-150

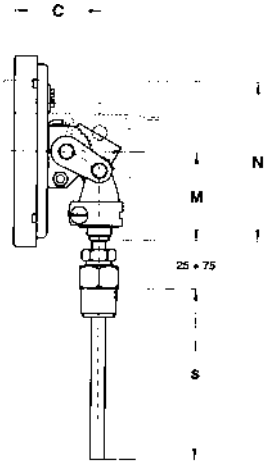
TYPES AND DIMENSIONS (mm.)



Lower connection (Cod. 1)



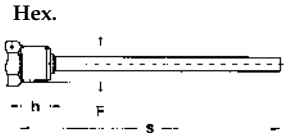
Back connection (Cod. 4)



Every-angle connection (Cod. 9)

DS	A	a	b	C	d	E	H	M	N	S
100	34,5	13	19	49	110,6	39	57	51,5	92,5	see page 3
125	34,5	14,5	19,5	49,5	120,6	39,5	65	51,5	93	see page 3
150	34,5	15	20	50	161	40	82	51,5	93,5	see page 3

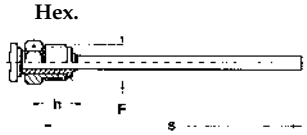
PROCESS CONNECTION: TYPES AND DIMENSIONS (mm.)



Fixed male (Cod. 3)

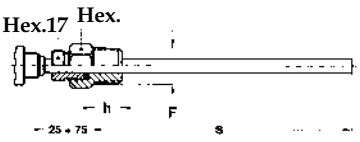
F	CODE	Hex.	h
1/2" NPT	43M	22*	17
1/2" BSP	41M	22*	14

*ø24 for every-angle connection (cod.9)



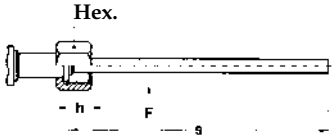
Male swivel nut (Cod. 5)

F	CODE	Hex.	h
1/2" BSP	41M	22	17
3/4" BSP	51M	27	17



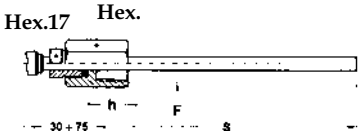
Sliding male and swivel nut (cod.9)

F	CODE	Hex.	h
1/2" BSP	41M	22	14
1/2" NPT	43M	22	17
3/4" BSP	51M	27	16
3/4" NPT	53M	27	17



Female swivel nut (Cod. 8)

F	CODE	Hex.	h
1/2" BSP	41F	24	13
3/4" BSP	51F	30	13



Sliding female and swivel nut (Cod. 7)

F	CODE	Hex.	h
1/2" NPT	43F	24	18
3/4" NPT	53F	32	18

SCALE RANGES

Tab. 1 - Single scales ·C and bulb length "S".

°C	ø 6 - 6,4 mm	ø 8 mm	ø 9,6 mm
-50...+50	100...500	*82...900	*82...900
-30...+50	114...500	*88...900	*88...900
-20...+120	83...500	*67...900	*67...900
-20...+40	137...500	*107...900	*107...900
-20...+80	100...500	*82...900	*82...900
0...+60	137...500	*107...900	*107...900
0...+80	114...500	*88...900	*88...900
0...+100	100...500	*82...900	*82...900
0...+120	88...500	*72...900	*72...900
0...+160	116...500	*91...900	*91...900
0...+200	98...500	*79...900	*79...900
0...+250	84...500	*70...900	*70...900
0...+300	100...500	*88...900	*88...900
0...+400	150...500	150...900	150...900
0...+500	150...500	150...900	150...900
0...+600 (1)	150...500	150...900	150...900
+50...+450	150...500	150...900	150...900
+100...+500	150...500	150...900	150...900

*Only for sliding and swivel nuts (Cod. 7 and 9), bulbs with 63 mm minimum length "S" are available (option S63).

(1) Max working temperature 500 °C (932 °F).

Tab. 2 - Single scales ·F and bulb length "S".

°F	ø 6 - 6,4 mm	ø 8 mm	ø 9,6mm
-80...+120	94...500	*76...900	*76...900
-20...+120	114...500	*88...900	*88...900
0...+200	94...500	*76...900	*76...900
0...+250	83...500	*67...900	*67...900
+50...+400	108...500	*89...900	*89...900
+50...+550	112...500	*100...900	*100...900
+200...+700	150...500	150...900	150...900
+100...+800	150...500	150...900	150...900
+200...+1000 (1)	150...500	150...900	150...900

Tab. 3 - Dual scales ·C / ·F and bulb length "S".

Primary °C (int.)	Secondary°F (ext.)	ø 6 - 6,4 mm	ø 8 mm	ø 9,6 mm
-50...+50	-58...+122	100...500	*82...900	*82...900
-30...+50	-22...+122	114...500	*88...900	*88...900
-20...+120	-4...+248	82...500	*67...900	*67...900
0...+60	+32...+140	137...500	*107...900	*107...900
0...+100	+32...+212	100...500	*82...900	*82...900
0...+120	+32...+248	88...500	*72...900	*72...900
0...+160	+32...+320	116...500	*91...900	*91...900
0...+200	+32...+392	98...500	*79...900	*79...900
0...+300	+32...+572	100...500	*88...900	*88...900
0...+400	+32...+752	150...500	150...900	150...900
0...+500	+32...+932	150...500	150...900	150...900
0...+600 (1)	+32...+1112 (1)	150...500	150...900	150...900

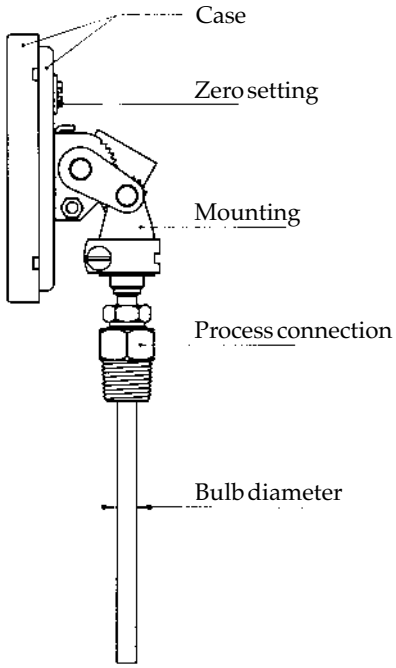
OPTIONS

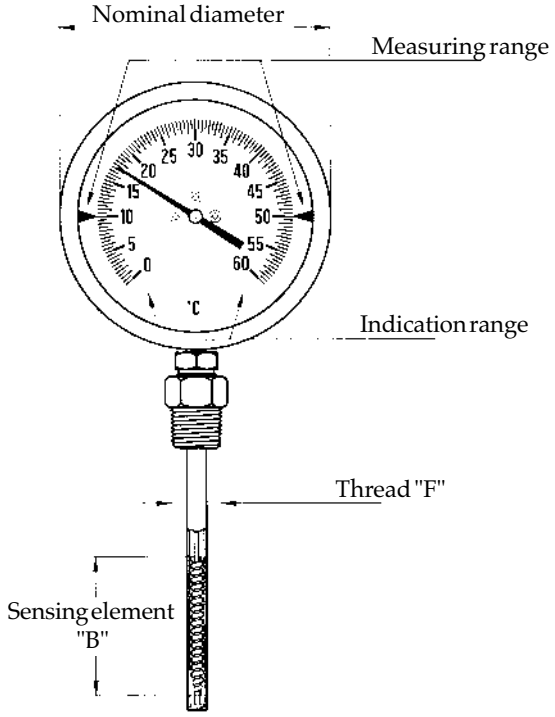
DESCRIPTION	CODE	DS100	DS125	DS150
Case and ring AISI 316 st.st.	**C40**	☞	☞	☞
Protection degree IP 65 (non filling)	**E65**	☞	☞	☞
Special overtemperature	**F02**	☞	☞	☞
General pointer IP 55 (only for type 84)	**L22**	☞		☞
Suitable for glycerine filling IP 67	**P00**	☞	☞	☞
Suitable for silicone oR Fluorolube filling (2) IP 67	**P01**	☞	☞	☞
Glycerine filling (max +160 °C)	**R10**	☞	☞	☞
Silicone filling (2) (max +250°C)	**R11**	☞	☞	☞
Fluorolube filling (2) (max +200 °C)	**R12**	☞	☞	☞
Minimum length 63 mm. bulb ø 8-9,6 mm. (1)	**S63**	☞	☞	☞
Tropicalization	**T01**	☞	☞	☞
AISI st.st. label for initialing	**T25**	☞	☞	☞
Plexiglas window (for ranges from 0 °C to +100 °C)	**T31**	☞		☞
Safety double stratified glass	**T32**	☞	☞	☞

(1) up to +300 °C (+550 °F) only, and with sliding male and swivel nut connection only (Cod. 9)
(2) VITON gaskets.

bi-metal thermometers
all stainless steel construction

06.TB8 DS100-125-150





HOW TO ORDER

	CODE & DESCRIPTION
06	06 - thermometer section
TB	TB - bi-metal thermometer
8	8 - standard serie
4	1 - Lower connection 4 - Back connection 9 - Every-angle connection
9	3 - Fixed male 5 - Male swivel nut 9 - Sliding male swivel nut 8 - Female swivel nut 7 - Sliding female swivel nut
E	E - DS100 F - DS125 G - DS150
43M	see process connection tables
S8	S6 - ø 6 mm. bulb S7 - ø 6,4 mm. bulb S8 - ø 8 mm. bulb S9 - ø 9,6 mm. bulb
200	bulb length in mm.
0/10 °C	see ranges tables
F02	see options tables

FILLING LIQUIDS

FIlling liquids	Ambient temp.	Working temp.
Glycerine 98%	+15...+65 °C (+60...+150 °F)	+15...+160 °C (-60...+320 °F)
Siliconic oil	-45...+65 °C (-50...+150 °F)	-40...+250 °C (-40...+480 °F)
Fluorolube	-60...+65 °C (-76...+150 °F)	-50...+200 °C (-58...+390 °F)

Glycerine and siliconic oil must not be used with strongly oxidant agents such as oxygen, chlorine, nitric acid and hydrogen peroxide. It could be dangerous because of spontaneous chemical reactions, inflammability or explosion. In these cases the use of fluorolube is recommended.

THERMOWELLS

Must be used on all applications where thermometer bulb is subjected to pressure, corrosive fluid or flow rate. Thermowells will make thermometer disassemble for calibration or replacement easier as the process will not be disturbed.

Thermowells available:

-thermowells with thread connection either built up type or machined from bar stock;

-thermowells with flange either built up type or machined from a bar stock;

-thermowells to be welded machined from a bar stock.

Type, material and constructive characteristics on catalogue sheet "09".

Bimetal thermometer for Heatings
Standard version, Back connection, Class 2.0

TB-HW Bi011

Rel. 20180713

Case: Steel zinced

Bezel: Steel nickel plated

Protection class: IP 34

Dial: Plastic, white with raised edge
lettering and graduation black
Optional: Imprint
Optional: Double scale °C/°F

Pointer: Plastic, black
adjustable at end of stem
Optional: Aluminium, black

Window: Plastic
Optional: Instrument glass

Stem: G 1/2 B brass detachable with fixing screw
L = 40 / 63 / 100 mm solid A/F 21
other lengths multipart soft soldered A/F 21
Optional: plug-in version

Connection: Backwards

Accuracy class: 2.0

Measuring range: 0-120°C

Diam.:	mm	Type numbers: 63	80	100
Stem	40 mm	903	906	909
Stem	63 mm	904	907	910
Stem	100 mm	905	908	911
Stem	150 mm	915	916	917

Measuring range: -20+60°C / -10+50°C / 0-60°C Please state the measuring range in your order!

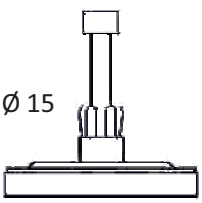
Diam.:	mm	Type numbers: 63	80	100
Stem	40 mm	923	926	929
Stem	63 mm	924	927	930
Stem	100 mm	925	928	931
Stem	150 mm	935	936	937

Measuring range: -30+50°C / -20+60°C / 0-120°C Please state the measuring range in your order!

Diam.:	mm	Type numbers: 63	80	100
Stem	50 mm	940	944	948
Stem	75 mm	941	945	949
Stem	100 mm	942	946	950
Stem	150 mm	943	947	951

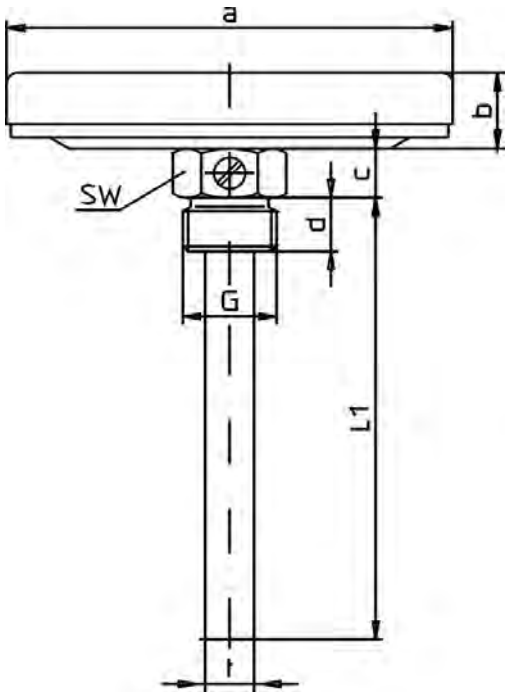
Other lengths
are available!

Special version:
Stem with measuring-pot Ø 15
and plug-in socket.



TB-HW Bi011

Bimetal thermometer for Heatings
Standard version, Back connection, Class 2.0



Type	a	b	c	d	SW	G	t
903	63	12	7	12	21	½ B	12
906	80	14	7	12	21	½ B	12
909	100	15	7	12	21	½ B	12

Dimensions and technical data are conform to current company standard.
Changes to improve our instruments will be made without preannouncement.

Bimetal thermometer for Heatings
Quality version, Back connection, Class 2.0

TB-HW Bi012

Rel. 20180713

Case: Steel zinced

Bezel: Steel nickel plated

Protection class: IP 43

Dial: Aluminium, white varnished
lettering and graduation black
Optional: Red mark
Optional: Imprint
Optional: Double scale °C/°F

Pointer: Aluminium, black
adjustable at end of stem
Optional: Silicone damped

Window: Instrument glass

Stem: G 1/2 B brass detachable with fixing screw
L = 28 / 45 / 50 / 63 / 100 mm solid A/F 21
other lengths multi part soldered A/F 21
Optional: Stainless steel welded

Connection: Backwards

Measuring range: Optional: see table below

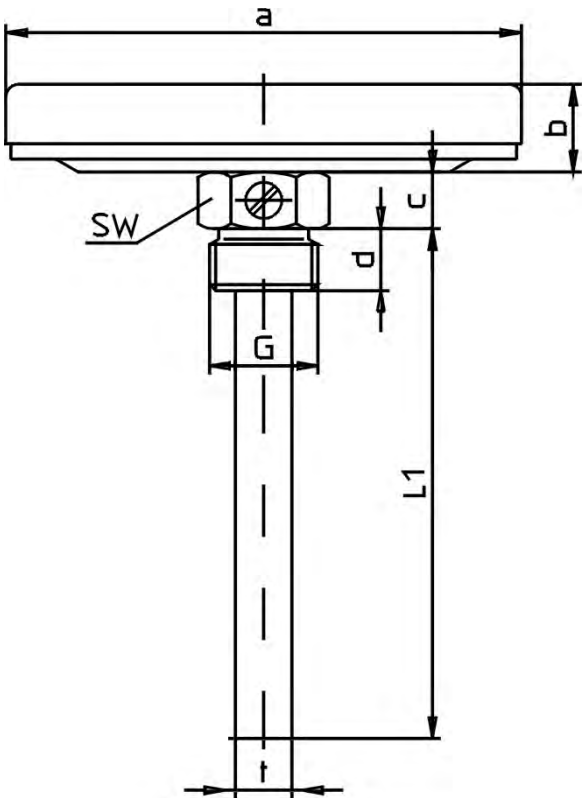
Accuracy class: 2.0

Measuring range:		0-120°C				-30+50°C / -20+60°C / -20+40°C -10+50°C / 0-60°C / 0-80°C / 0-100°C Please state the measuring range in your order!			
		Type numbers:							
Diam.:	mm	63	80	100	160	63	80	100	160
Stem	28 mm	1060	1080	1100	1160	-	-	-	-
	45 mm	1061	1081	1101	1161	11061	11081	11101	11161
	50 mm	1062	1082	1102	1162	11062	11082	11102	11162
	63 mm	1063	1083	1103	1163	11063	11083	11103	11163
	80 mm	1064	1084	1104	1164	11064	11084	11104	11164
	100 mm	1065	1085	1105	1165	11065	11085	11105	11165
	120 mm	1066	1086	1106	1166	11066	11086	11106	11166
	160 mm	1067	1087	1107	1167	11067	11087	11107	11167
	200 mm	1068	1088	1108	1168	11068	11088	11108	11168
	250 mm	1069	1089	1109	1169	11069	11089	11109	11169

Stem 28 mm only 0-100 and 0-120°C available!
Maximum stem length is 400 mm!

TB-HW Bi012

Bimetal thermometer for Heatings
Quality version, Back connection, Class 2.0



Type	a	b	c	d	SW	G	t
1060	63	13	11	12	21	½ B	12
1080	80	13	11	12	21	½ B	12
1100	100	15	11	12	21	½ B	12
1160	160	19	11	12	21	½ B	12

Dimensions and technical data are conform to current company standard.
Changes to improve our instruments will be made without preannouncement.

Bimetal thermometer for Air ducts
With flange, Back connection, Class 2.0

TB-HW Bi008

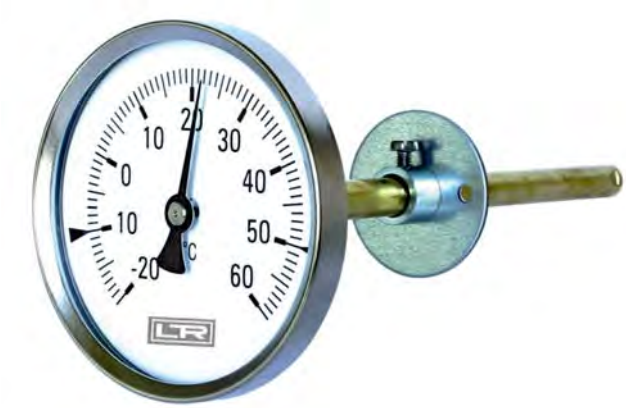
Rel. 20180713

Case: Steel zinced
Optional: Stainless steel AISI 304

Bezel: Steel nickel plated
Optional: Stainless steel AISI 304

Protection class: IP 43

Dial: Aluminium, white varnished
lettering and graduation black
Optional: Red mark
Optional: Imprint
Optional: Double scale °C/°F



Pointer: Aluminium, black
adjustable at end of stem
Optional: Silicone damped

Window: Instrument glass
Optional: Perspex window
Optional: Laminated safety glass
Optional: Max. drag pointer
Optional: Max./Min. drag pointer
Optional: Red mark pointer

Stem: Brass Ø 9 mm
Optional: Stainless steel of AISI 316 Ti

Mounting method: Flange steel zinced Ø 40 mm with fixing screw
movable on stem
diam. 160 mm, flange Ø 80 mm steel zinced
Optional: Thread G ½ B brass with fixing screw
Optional: Flange Ø 80 steel zinced
Optional: Flange Ø 80 stainless steel

Connection: Backwards

Measuring range: 0-120°C
- Resp. opposite

Accuracy class: 2.0
- Accuracy class 1
- Works test certificate

Diam.:	mm	Type numbers: 63	80	100	160
Stem	50 mm	1261	1281	1301	1361
Stem	100 mm	1262	1282	1302	1362
Stem	150 mm	1263	1283	1303	1363
Stem	200 mm	1264	1284	1304	1364
Stem	250 mm	1265	1285	1305	1365

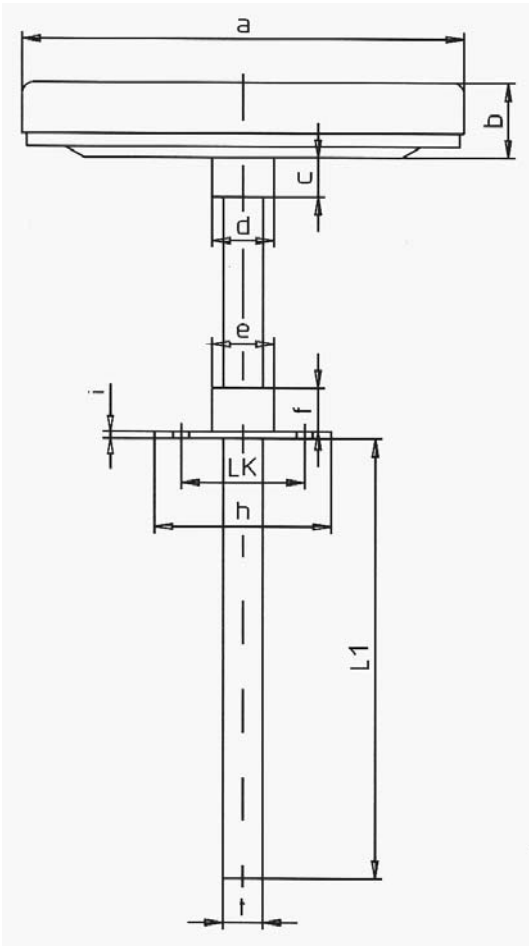
Other lengths are available!

Measuring-range	Graduation
-40 +40°C	1°
-30 +50°C	
-20 +60°C	
-20 +40°C	
-15 +45°C	
-10 +60°C	
-10 +50°C	
0 -40°C	
0 -50°C	
0 -60°C	
0 -80°C	
0 -100°C	2°
0 -120°C	
0 -160°C	
0 -200°C	
0 -250°C	5°
0 -300°C	
0 -400°C	10°
1) 0 -500°C	
1) 0 -600°C	

1) stem stainless steel needed

TB-HW Bi008

Bimetal thermometer for Air ducts
With flange, Back connection, Class 2.0



Type	a	b	c	d	e	f	LK	h	i	t
1260	63	13	9	14	14	10	28	40	1,5	9
1280	80	13	9	14	14	10	28	40	1,5	9
1300	100	15	9	14	14	10	28	40	1,5	9
1360	160	19	9	14	14	10	54	80	2,0	9

Dimensions and technical data are conform to current company standard.
Changes to improve our instruments will be made without preannouncement.

Bimetal thermometer for Air ducts, with back flange
Light version, Back connection, Class 2.0

TB-HW Bi009

Rel. 20180713

Case: Steel zinced

Bezel: Steel nickel plated

Protection class: IP 34

Dial: Aluminium, white varnished
lettering and graduation black
Optional: Red mark
Optional: Imprint
Optional: Double scale °C/°F

Pointer: Aluminium, black
adjustable at end of stem
Optional: Silicone damped

Window: Instrument glass
Optional: Perspex window
Optional: Laminated safety glass
Optional: Max. drag pointer
Optional: Max./Min. drag pointer
Optional: Red mark pointer

Stem: Brass Ø 9 mm
Optional: Stainless steel of AISI 316 Ti

Mounting method: With bac k flange lightweight version, round
for s urface mounting on air duc t

C onnection: Backwards

Measuring range: 0-120°C
Optional: see table below

Accuracy class: 2.0
Optional: Accuracy class 1
Optional: Works test certificate

Diam.:	mm	**Type numbers:** 63	80	100
Stem	50 mm	1661	1681	1701
Stem	100 mm	1662	1682	1702
Stem	150 mm	1663	1683	1703
Stem	200 mm	1664	1684	1704
Stem	250 mm	1665	1685	1705

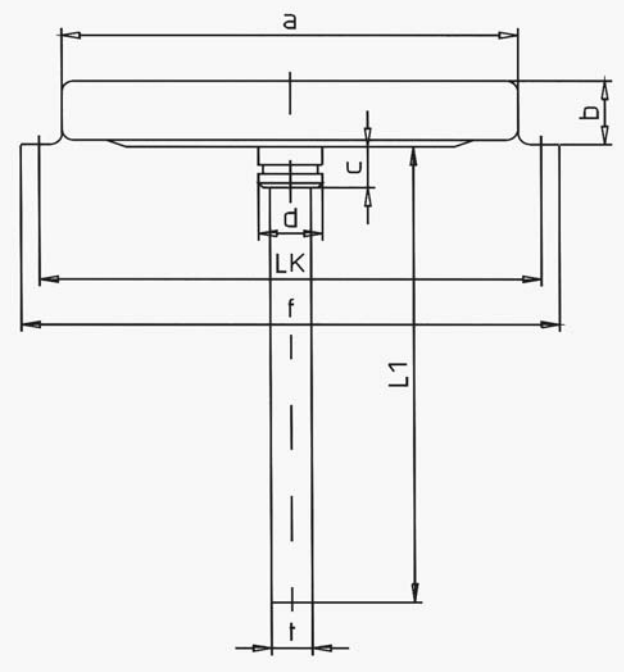
Other lengths
are available!

Measuring-range	Graduation
-40 +40°C	1°
-30 +50°C	
-20 +60°C	
-20 +40°C	
-15 +45°C	
-10 +60°C	
-10 +50°C	
0 -40°C	
0 -50°C	
0 -60°C	
0 -80°C	
0 -100°C	2°
0 -120°C	
0 -160°C	
0 -200°C	
0 -250°C	5°
0 -300°C	
0 -400°C	10°
1) 0 -500°C	
1) 0 -600°C	

1) stem stainless steel needed

TB-HW Bi009

Bimetal thermometer for Air ducts, with back flange
Light version, Back connection, Class 2.0



Type	a	b	c	d	f	LK	t
1660	63	14	9	14	82	74	9
1680	80	14	9	14	102	91	9
1700	100	14	9	14	118	110	9

Dimensions and technical data are conform to current company standard.
Changes to improve our instruments will be made without preannouncement.

Bimetal thermometer for Air ducts, with back flange
Heavy version, Back connection, Class 2.0

TB-HW Bi010

Rel. 20180713

Case: Steel zinced
Optional: Diam. 100 stainless steel AISI 304

Bezel: Steel nickel plated
Optional: Diam. 100 stainless steel AISI 304

Protection class: IP 43

Dial: Aluminium, white varnished
lettering and graduation black
Optional: Red mark
Optional: Imprint
Optional: Double scale °C/°F

Pointer: Aluminium, black
adjustable at end of stem
Optional: Silicone damped

Window: Instrument glass
Optional: Perspex window
Optional: Laminated safety glass
Optional: Max. drag pointer
Optional: Max./Min. drag pointer
Optional: Red mark pointer

Stem: Brass Ø 9 mm
Optional: Stainless steel AISI 316 Ti

Mounting method: With back flange heavy version, flattened design
for surface mounting on air duct
Optional: Diam. 100 stainless steel, round design
Optional: With front flange chromed, for panel mounting

Connection: Backwards

Measuring range: 0-120°C
Optional: see table below

Accuracy class: 2.0
Optional: Accuracy class 1.0
Optional: Works test certificate

Type numbers:

Diam.:	mm	63	80	100	160
Stem 50	mm	1461	1481	1501	1561
Stem 100	mm	1462	1482	1502	1562
Stem 150	mm	1463	1483	1503	1563
Stem 200	mm	1464	1484	1504	1564
Stem 250	mm	1465	1485	1505	1565

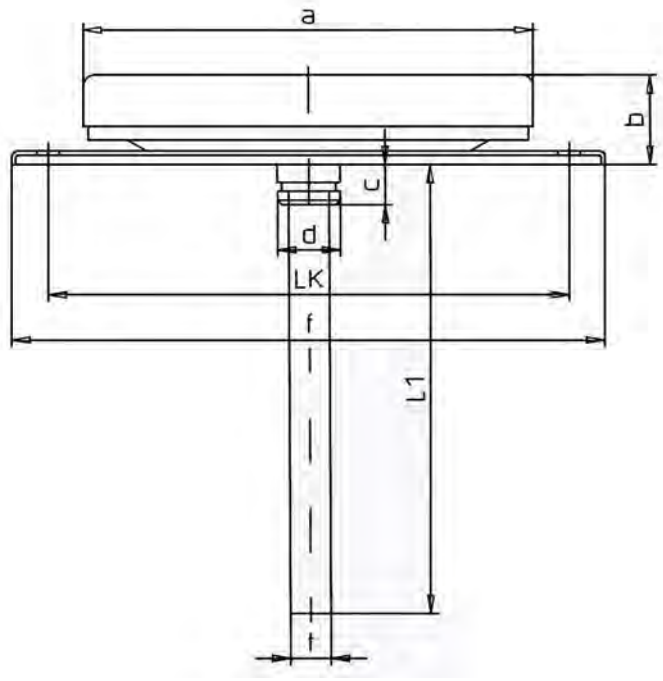
Other lengths
are available!

Measuring-range	Graduation
-40 +40°C	1°
-30 +50°C	
-20 +60°C	
-20 +40°C	
-15 +45°C	
-10 +60°C	
-10 +50°C	
0 -40°C	
0 -50°C	
0 -60°C	
0 -80°C	
0 -100°C	2°
0 -120°C	
0 -160°C	
0 -200°C	
0 -250°C	5°
0 -300°C	
0 -400°C	10°
1) 0 -500°C	
1) 0 -600°C	

1) stem stainless steel needed

TB-HW Bi010

Bimetal thermometer for Air ducts, with back flange
Heavy version, Back connection, Class 2.0



Type	a	b	c	d	f	LK	t
1460	63	17	7	14	85	76	9
1480	80	21	7	14	110	95	9
1500	100	22	7	14	132	116	9
1560	160	23	7	14	190	182	9

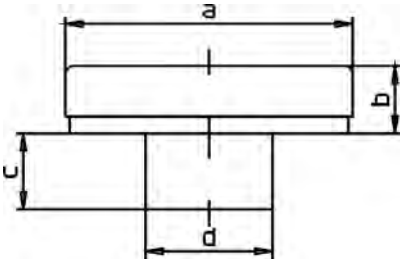
Dimensions and technical data are conform to current company standard.
Changes to improve our instruments will be made without preannouncement.

Bimetal thermometer for touching measurement
Coiled spring or via screwed connection, Class 2

TB-HW Bi014

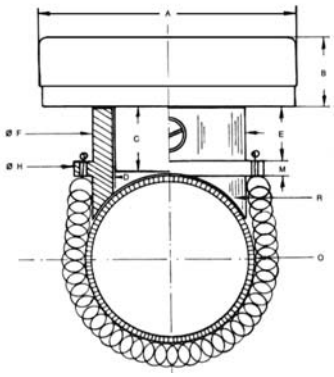
Rel. 20180713

Case:	Diam. 34 mm, steel nickel plated
Bezel:	Steel nickel plated
Protection class:	IP 44
Dial:	Aluminium, white varnished lettering and graduation black Optional: Imprint
Pointer:	Aluminium, black
Window:	Instrument glass
Mounting method:	Plug-in version, diam. 15 mm, brass nickel plated
Connection:	Backwards
Accuracy class:	2.0



Measuring range:	0-80°C	0-50°C
Type numbers:	701	700

a	b	c	d
34	8	9	15



Accessories: Holder made of brass
with spiral sp ring and fixing screw
for pipes with 22 mm outer diam.
- without thermometer -

Type number: 730

Accessories: Screw connection made of brass
G ¾ union nut and G ¾ male thread
with socket for the thermometer

Type number: 731

Dimensions and technical data are conform to current company standard.
Changes to improve our instruments will be made without preannouncement.

Bimetal thermometer for touching measurement
With bar magnets, Class 2.5

TB-HW Bi018

Rel. 20180713

Case: Diam. 50 mm steel nickel plated
Diam. 63 and 80 mm stainless steel AISI 304
Diam. 100 mm steel zinced

Bezel: Diam. 50 mm steel nickel plated
Diam. 63 and 80 mm stainless steel AISI 304
Diam. 100 mm AISI 304

Dial: Aluminium, white varnished
Diam. 80 at 0-500°C and 0-600°C steel enamels
lettering and graduation black

Pointer: Aluminium, black
adjustable

Window: Instrument glass
Optional: Max. drag pointer (diam. 63-100)
Optional: Max./Min. drag pointer (diam. 63-100)

Measuring element: Bimetal spiral spring

Measuring range: 0-120°C
Optional: see table below

Mounting method: With bar magnets

Connection: Backwards

Accuracy class: 2,5
Optional: Works test certificate

Features:
- Flexible bar magnets
- As humidity gauge 0-100% rel. humidity
- Protection case

Type numbers:

Diam.: mm		50	63	80	100
2 simple	Magnets	1951	1961	1981	-
3 simple		-	1962	1982	-
4 simple		-	1963	1983	-
2 strong		-	-	1984	-
3 strong		-	-	1985	-
4 strong		-	-	1986	2006

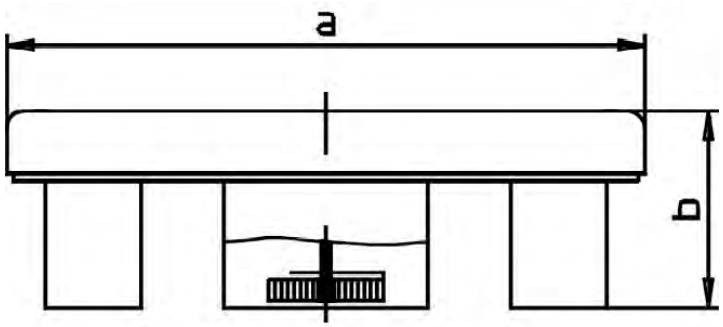
Measuring-range for diam. 50-100	Gradu-ation
-40 +40°C -30 +70°C -30 +50°C -20 +40°C -20 +60°C	1°
-20 +80°C -20 +100°C	2°
-10 +60°C -10 +50°C 0 -60°C 0 -80°C	1°
0 -100°C 0 -120°C 0 -160°C 0 -200°C	2°
0 -250°C 0 -300°C 0 -350°C	5°
0 -400°C	10°
and for diam. 80	
1) 0 -500°C 1) 0 -600°C	10°

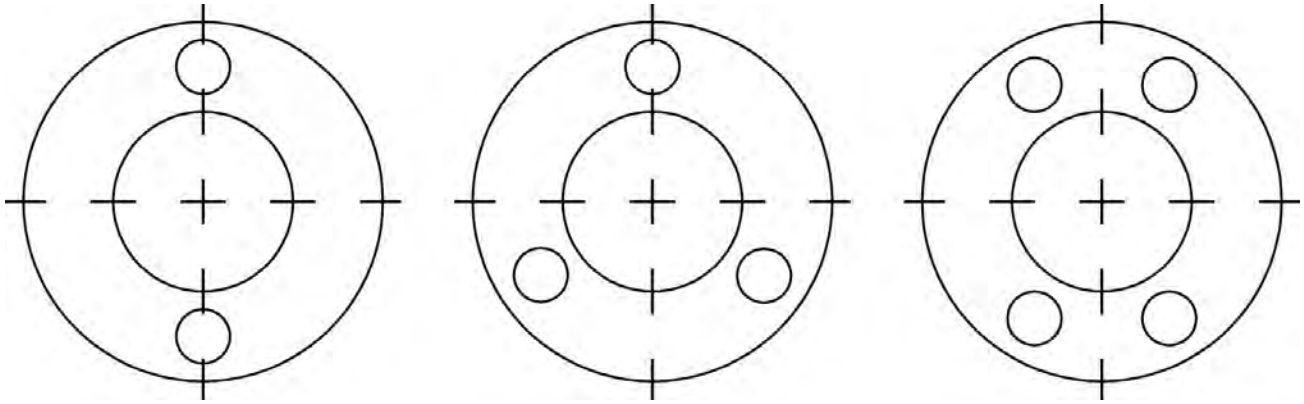
1) Dial in steel-enamels nesessary!

Annular magnets affect the measuring result because of the heat emission on the bimetal spiral spring.
That's the reason why our gauges are fitted with bar magnets mounted as far as possible from the measuring element.

TB-HW Bi018

Bimetal thermometer for touching measurement
With bar magnets, Class 2.5





Layout of magnets
2 pieces

Layout of magnets
3 pieces

Layout of magnets
4 pieces

Type	a	b	Number of magnets
1950	50	30	
1960	63	31	
1980	80	31	
2000	100	33	