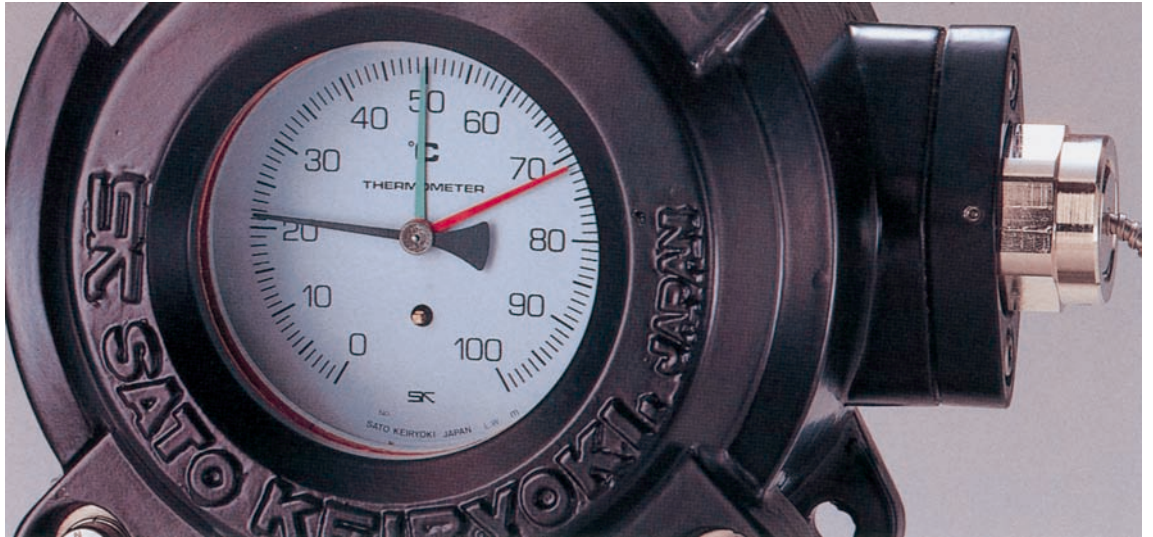


M

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MODEL 2150-B BIMETAL THERMOMETER FOR ASPHALT (SMALL TYPE)

SPECIFICATIONS

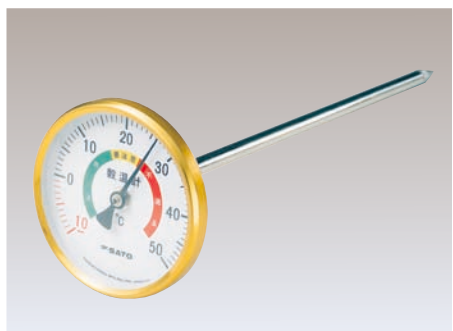
Case diameter:	φ80 mm
Dial diameter:	φ75 mm (Black scale is provided)
Case material:	SPCC Nickel plated
Cover material:	SUS304
Window material:	Glass
Bulb dimensions:	φ8 x 200 mm, pointed end
Bulb material:	BsT Nickel plating
Temp. range:	0 to 200°C (5/1)



MODEL 2250-10 BIMETAL THERMOMETER FOR ASPHALT (LARGE TYPE II)

SPECIFICATIONS

Case diameter:	φ175 mm
Dial diameter:	φ150 mm
Case & cover material:	ADC Melamin-baked plating
Window material:	Glass
Bulb dimensions:	φ8 x 200 mm, pointed end
Bulb material:	SUS304
Temp. range:	0 to 200°C (2/1)



MODEL 2180-00 BIMETAL THERMOMETER FOR GRAIN WAREHOUSES

SPECIFICATIONS

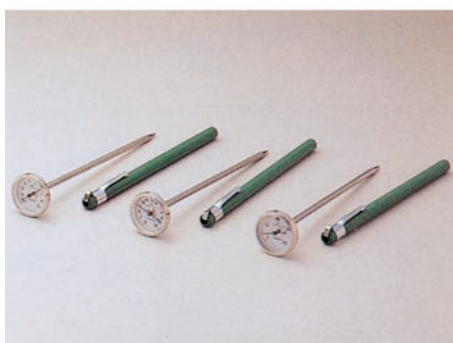
Case diameter:	φ80 mm
Dial diameter:	φ75 mm
Case material:	SPCC Nickel plating
Cover material:	SUS304
Window material:	Glass
Bulb dimensions:	Model 2180-00 φ8 x 250 mm Model 2185-00 φ8 x 500 mm
Bulb material:	BsT plating
Temp. range:	-10 to +50°C (1/1)



MODEL 2340-B SURFACE (MAGNETIC) BIMETAL THERMOMETER

SPECIFICATIONS

Case diameter:	φ64 mm X 16 mm (t)
Dial diameter:	φ60 mm
Case material:	Bs chrome plating
Cover material:	SUS304
Window material:	Glass
Bulb dimensions:	φ25 x 7 mm
Temp. range:	Model 2340-20 0 to 200°C (2/1) Model 2340-40 0 to 400°C (5/1)



MODEL 2060-B POCKET BIMETAL THERMOMETER

SPECIFICATIONS

Case diameter:	φ26 mm
Dial diameter:	φ24 mm
Case & cover material:	SUS304
Window material:	Glass
Bulb dimensions:	φ4 x 132 mm, pointed end
Bulb material:	SUS304
Sheath material:	Polyvinyl chloride
Temp. range:	Model 2060-45 -40 to +50°C (1/1) Model 2060-11 -10 to +110°C (1/1) Model 2060-20 0 to +200°C (5/1)



MODEL BM-T-40S, 60S, 70S, 90S BIMETAL THERMOMETERS (BACK CONNECTION)

SPECIFICATIONS

Indoor/outdoor use

Range:	-50°C to +500°C	
Case:	SUS304	
Cover:	SUS304	
Window:	Glass	
Bulb:	SUS304	
Case diameter:	φD (dial dia. φ)	
	45 mm (42 mm)	(BM-T-40S)
	64 mm (60 mm)	(BM-T-60S)
	80 mm (70 mm)	(BM-T-70S)
	101 mm (90 mm)	(BM-T-90S)

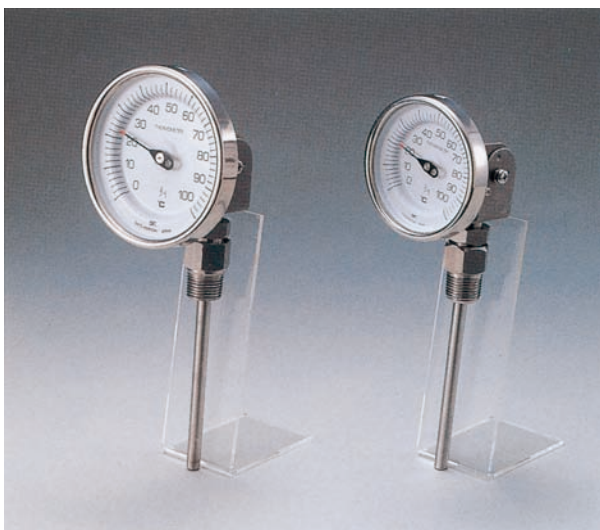


MODEL BM-S-60S, 70S, 90S BIMETAL THERMOMETERS (BOTTOM CONNECTION)

SPECIFICATIONS

Indoor/outdoor use

Range:	-50°C to +500°C	
Case:	SUS304	
Cover:	SUS304	
Window:	Glass	
Bulb:	SUS304	
Case diameter:	φD (dial dia. φ)	
	64 mm (60 mm)	(BM-S-60S)
	80 mm (70 mm)	(BM-S-70S)
	101 mm (90 mm)	(BM-S-90S)

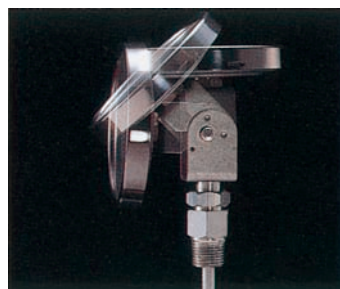


MODEL BM-F-70S, 90S TILTING TYPE BIMETAL THERMOMETER

SPECIFICATIONS

Indoor/outdoor use

Range:	-50°C to +500°C	
Case:	SUS304	
Cover:	SUS304	
Window:	Glass	
Bulb:	SUS304	
Case diameter:	φD (dial dia. φ)	
	101 mm (90 mm)	(BM-F-90S)
	80 mm (70 mm)	(BM-F-70S)



STANDARD SPECIFICATIONS OF BIMETAL THERMOMETERS

A. STANDARD FOR CASE

Type	Dial dia.	Model name	Type number
T	φ40 mm	BM-T-40S	2440-B
	φ60 mm	BM-T-60S	2460-B
	φ70 mm	BM-T-70S	2470-B
	φ90 mm	BM-T-90S	2490-B
S	φ60 mm	BM-S-60S	2465-B
	φ70 mm	BM-S-70S	2475-B
	φ90 mm	BM-S-90S	2495-B
F	φ70 mm	BM-F-70S	2700-B
	φ90 mm	BM-F-90S	2710-B

Type T . . . Back connection type

Type S . . . Bottom connection type

Type F . . . Tilting type

B. STANDARD FOR SCALE PLATE

Tem. range (unit: °C)	Minimum div.	Dial diameter			
		φ40	φ60	φ70	φ90
-50 to +50	2/1	○	●	○	○
-30 to +50	1/1	○	●	○	○
0 to +50	1/1	○	●	—	○
0 to +100	2/1	○	●	○	○
0 to +120	2/1	○	●	—	○
0 to +150	2/1	○	●	○	○
0 to +200	5/1	○	●	○	○
0 to +300	10/1	○	○	○	○
0 to +400	10/1	—	—	—	○
0 to +500	10/1	—	—	—	○

● conforms to JIS B7542. Both ● and ○ are available.

Other range and Fahrenheit scale available upon quantity.

C. STANDARD FOR BULB

Material	Diameter of bulb			
	φ6	φ8	φ10	φ12
SUS 304	○	○	○	○
SUS 316	○	○	○	○

○ available.

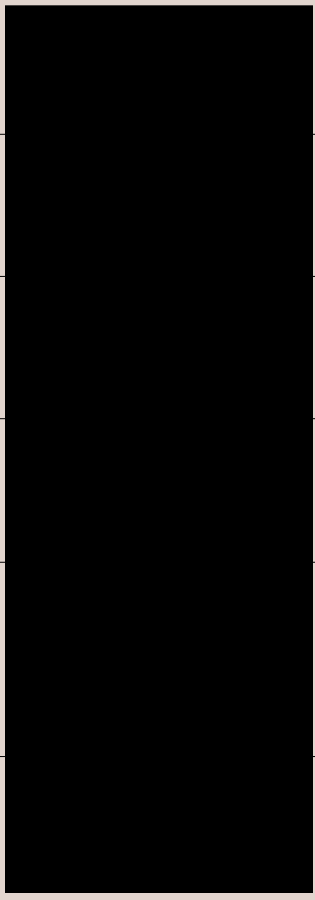

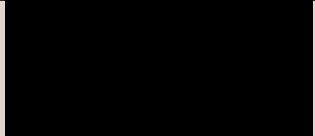
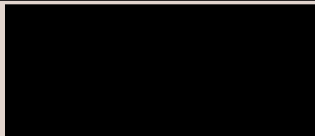
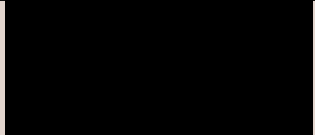
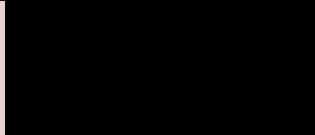
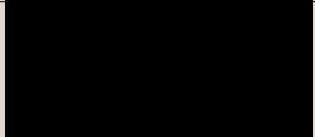
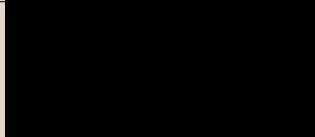
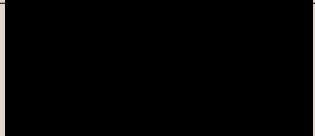
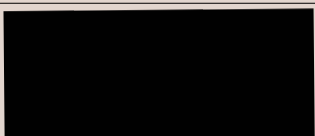
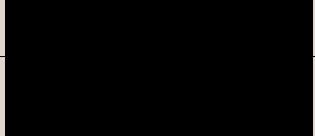
D. STANDARD FOR SCREW

Name	Applied dia. of bulb	Material		
		SUS304	SUS316	SUS304*
PT•PF1/4	φ6	○	○	—
PT•PF3/8	φ6, 8	○	○	○
PT•PF1/2	φ6, 8, 10, 12	○	○	○
PT•PF3/4	φ6, 8, 10, 12	○	○	○
PT•PF1/1	φ8, 10, 12	○	○	○

○ available. * with slide screw type.

SHAPE OF CONNECTOR FOR BULB

B . . . For bimetal type L/S . . . For remote sensing type ○ . . . Available × . . . Not available

Type	Name	Drawing	B	L S	Type	Name	Drawing	B	L S
SW	Union type		○	○	SC	With fixed screwed connection type		○	×
SF	Semi union type		○	○	UW	Union type with thermowell		○	○
NB	Screwless type		○	○	SG	With fixed position cap swivel connection type		○	○
NS	Plain connection without pipe thread type		×	○	SG	Slide screw type		○	○
FG	Flange type		○	○	FW	Flange type with thermowell		○	○
TM	Bent type		×	○	* NB Screwless type: Shapes and sizes will change due to the size and material of the case used. ** TM Bent type: Specify the length of L longer than 500 mm.				

STANDARD SPECIFICATIONS OF REMOTE SENSING DIAL THERMOMETERS

A. STANDARD FOR CASE

	Dial dia.	Model name	Type number	
Wall mounted bottom outlet	φ75 mm	LB-75S	3050-L	*1
		SB-75S	3450-S	
	φ100 mm	LB-100S	3010-L	
		SB-100S	3405-S	
	φ150 mm	LB-150S	3020-L	
		SB-150S	3420-S	
Flush mounted back outlet	φ75 mm	LD-75S	3060-L	*2
		SD-75S	3460-S	
	φ100 mm	LD-100S	3030-L	
		SD-100S	3430-S	
	φ150 mm	LDS-150	3040-L	
		SDS-150	3440-S	
Rigid stem type	φ100 mm S type	LAS-100S	3012-L	*3
		SAS-100S	3412-S	
	φ100 mm L type	LAL-100S	3014-L	
		SAL-100S	3414-S	
	φ100 mm S type	LAT-100S	3015-L	
		SAT-100S	3415-S	
φ100 mm Tilting type	LAF-100S	3058-L		
	SAF-100S	3458-S		
φ100 S type	SAS-100SO	3053-S	*3	
	φ100 T type	SAT-100SO		3455-S

*1 Water proof type (LBW-100S / SBW-100S) available.

Water proof oil-filled type (SBW-100SO) available.

*2 Water proof type (LDW-100S / SDW-100S) available.

Water proof oil-filled type (SDW-100SO) available.

*3 Oil-filled for vibration-proof type.

B-1. STANDARD FOR SCALE PLATE (L: Liquid type)

Tem. range (unit: °C)	Dial diameter		
	φ75	φ100	φ150
-150 to +50	—	5/1	—
-100 to +50	2/1	2/1	2/1
-50 to +50	2/1	2/1	2/1
-30 to +50	2/1	1/1	1/1
0 to +50	2/1	1/1	1/1
0 to +80	2/1	1/1	1/1
0 to +100	2/1	2/1	2/1
0 to +120	2/1	2/1	2/1
0 to +150	5/1	2/1	2/1
0 to +200	5/1	5/1	5/1
0 to +300	10/1	10/1	10/1

* Other range and Fahrenheit scale available upon quantity.

B-2. STANDARD FOR SCALE PLATE (S: Mercury type)

Tem. range (unit: °C)	Dial diameter		
	φ75	φ100	φ150
-50 to +50	2/1	1/1	1/1
-30 to +50	2/1	1/1	1/1
0 to +50	2/1	1/1	1/1
0 to +80	2/1	1/1	1/1
0 to +100	2/1	1/1	1/1
0 to +120	2/1	2/1	2/1
0 to +150	5/1	2/1	2/1
0 to +200	5/1	2/1	2/1
0 to +300	10/1	5/1	5/1
0 to +500	10/1	10/1	10/1
0 to +600	10/1	10/1	10/1
+50 to +650°C	10/1	10/1	10/1

* Other range and Fahrenheit scale available upon quantity.

C. STANDARD FOR LEAD WIRE

Name	Type	Specifications
SUS 304 Flexible tube	FS	SUS304 lead wire is coated with flexible tube
SUS304 Flexible tube coated with polyvinyl chloride (P.C.)	FSB	Same as above FS type, but coated with P.C.
Lead wire only	LS	SUS304 lead wire without any coating
Lead wire in flexible tube & bulb are coated with P.C.	BTC	Same as above FSB type, but bulb is also coated with P.C.
Lead wire in flexible tube & bulb are coated with tefron tube	TTC	Same as above BTC type, but coated with P.C.

D. STANDARD FOR BULB

Material	Diameter of bulb		
	φ8	φ10	φ12
SUS 304	○	○	○
SUS 316	○	○	○

○ available.

E. SHAPE OF CONNECTOR FOR BULB

(Refer to page 38.)

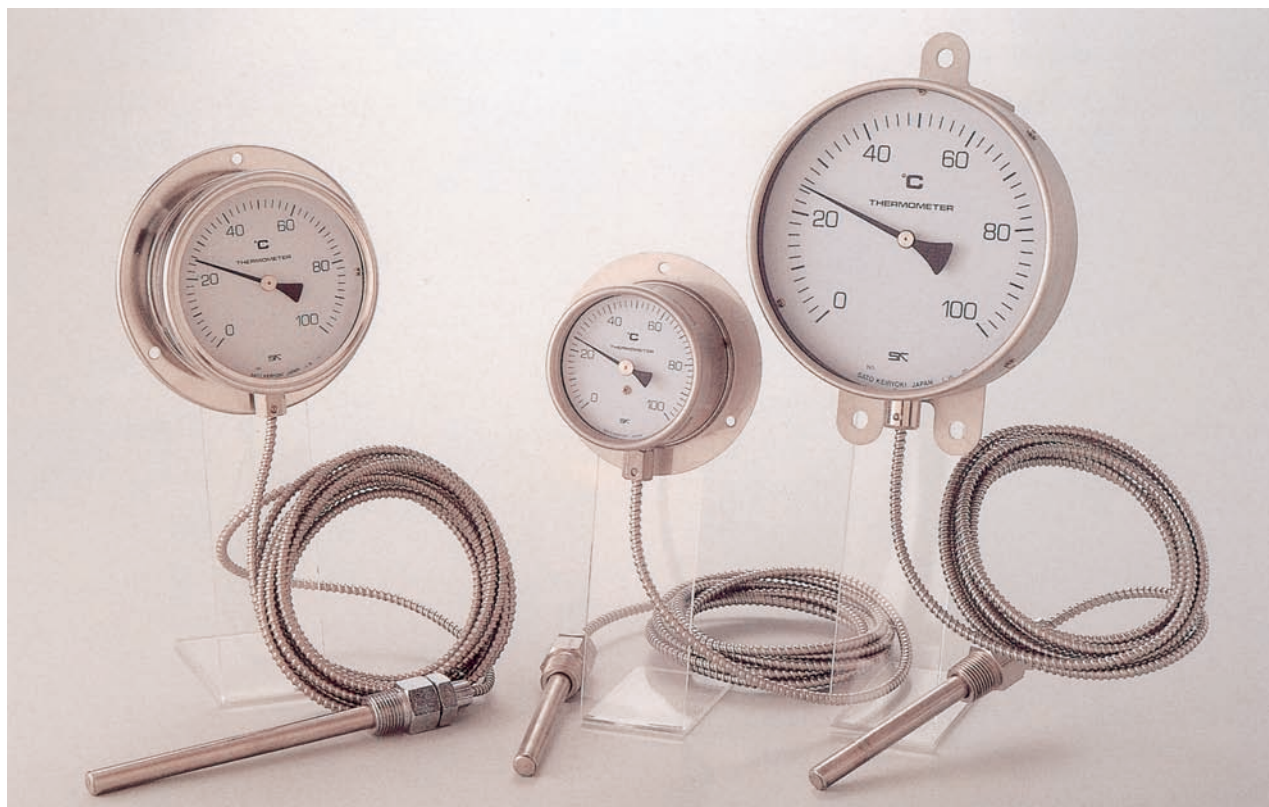
F. STANDARD FOR SCREW

Name	Applied dia. of bulb	Material			
		SUS304	SUS316	SUS304*1	SUS304*2
PT•PF3/8	φ8, 10	○	○	○	—
PT•PF1/2	φ8, 10, 12	○	○	○	○
PT•PF3/4	φ8, 10, 12	○	○	○	○
PT•PF1/1	φ8, 10, 12	○	○	○	—

○ available.

*1 with slide screw type.

*2 with fixed position cap swivel connection type.



MODEL LB, SB-100S DIAL THERMOMETER (WALL MOUNTED BOTTOM OUTLET)

SPECIFICATIONS

Case :	SUS304 Highly polished
Cover:	SUS304
Window:	Glass
Dial:	White background with black embossed markings.
Connecting tubing:	Furnished standard with 3 m or more of SUS304 armor over copper capillary
Bulb:	SUS304
Case diameter:	ϕ D (dial dia. ϕ) 110 mm (100 mm)
Range:	Model LB-100S -150 to +300°C Model SB-100S -50 to +650°C
Type of liquid filled:	Model LB-100S Solid liquid Model SB-100S Mercury

MODEL LB, SB-150S DIAL THERMOMETER (WALL MOUNTED BOTTOM OUTLET)

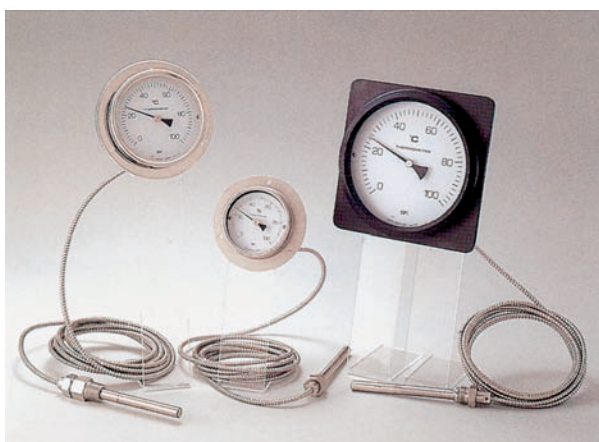
SPECIFICATIONS

Case diameter:	ϕ D (dial dia. ϕ) 154 mm (150 mm)
Others same as above Model LB, SB-100S	

MODEL LB, SB-75S DIAL THERMOMETER (WALL MOUNTED BOTTOM OUTLET)

SPECIFICATIONS

Case diameter:	ϕ D (dial dia. ϕ) 80 mm (75 mm)
Others same as above Model LB, SB-100S	



MODEL LDS, SDS-150 DIAL THERMOMETER (FLUSH MOUNTED BACK OUTLET)

SPECIFICATIONS

Case diameter :	ϕ D (dial dia. ϕ) 174 mm (150 mm)
Others same as Model LD, SD-100S	

MODEL LD, SD-100S DIAL THERMOMETER (FLUSH MOUNTED BACK OUTLET)

SPECIFICATIONS

Case :	SUS304
Cover:	SUS304
Window:	Glass
Dial:	White background with black embossed markings.
Connecting tubing:	Furnished standard with 3 m or more of SUS304 armor over copper capillary
Bulb:	SUS304
Case diameter:	ϕ D (dial dia. ϕ) 110 mm (100 mm)
Range:	Model LD-100S -150 to +300°C Model SD-100S -150 to +650°C
Type of liquid filled:	Model LD-100S Solid liquid Model SD-100S Mercury

MODEL LD, SD-75S DIAL THERMOMETER (FLUSH MOUNTED BACK OUTLET)

SPECIFICATIONS

Case diameter:	ϕ D (dial dia. ϕ) 80 mm (75 mm)
Others same as above Model LD, SD-100S	



MODEL SAS-100SO, SAT-100SO, RIGID STEM TYPE DIAL THERMOMETERS (OIL-FILLED FOR VIBRATION-PROOF TYPE, WATER-PROOF TYPE)

Model SAS-100S (Bottom connection)
 Model SAT-100S (Back connection)
 Model SAL-100S (Bottom connection, bulb "L")

SPECIFICATIONS

Range: +50 to +650°C
 Case : SUS304 Highly polished
 Cover: SUS304
 Window: Glass
 Dial: White background with black embossed markings
 Bulb: SUS304
 Case diameter: ϕ D (dial dia. ϕ)
 110 mm (100 mm)

Solid liquid filled type is available but range -150 to +300°C.

MODEL LAF-100S, SAF-100S RIGID STEM-TILTING TYPE DIAL THERMOMETERS

SPECIFICATIONS

Case : SUS304
 Cover: SUS304
 Window: Glass
 Flexible joint: Bs (Chrome plated)
 Range: Model LAF-100S -150 to +300°C
 Model SAF-100S -50 to +650°C
 Dial: White background with black embossed markings
 Bulb: SUS304
 Case diameter: ϕ D (dial dia. ϕ)
 110 mm (100 mm)



MODEL LBW (SBW)-130E ELECTRIC CONTACT DIAL THERMOMETERS (1 OR 2 POINTS) (WATER-PROOF TYPE)

SPECIFICATIONS

Case : Cast Aluminium Alloy (ADC)
 Cover: Cast Aluminium Alloy (ADC)
 FINISH: Melamin-baked plating
 Window: Acryl resin
 Range: Model LBW-130E -150 to +300°C
 Model SBW-130E -50 to +650°C
 Connecting tubing: Furnished standard with 3 m of SUS304 armor over
 SUS304 capillary
 Bulb: SUS304
 Case diameter: ϕ D (dial dia. ϕ)
 161 mm (130 mm)

MODEL EX-01R/EX-01R-M EXPLOSION PROTECTED CONSTRUCTION TYPE TEMPERATURE SWITCHES

APPROVED BY THE LABOR SAFETY BUREAU
 OF THE MINISTRY OF LABOR OF JAPANESE
 GOVERNMENT (AUTHORIZED NO. 33791)

Applied explosion protected construction: d2G4
 Places of intallation: Grade 1 or 2
 Case & cover material: ADC
 Finish: Melamin-baked plating
 Window: Tempered glass 10t. (J.I.S. R3206)
 Contact capacity: AC100/200V 3A internal relay type
 * Micro-switching type is available.
 Case diameter: ϕ D (dial dia. ϕ)
 200 mm (100 mm)
 Range: Mercury-filled type -50 to +650°C
 Solid-liquid-filled type -150 to +300°C

MODEL SBW-130MS MICRO-SWITCHING CONTACT THERMOMETERS (1 OR 2 POINTS)

SPECIFICATIONS

Same as above but with micro-switching contact.

MODEL SBW-130MSB MICRO-SWITCHING CONTACT THERMOMETERS (1 OR 2 POINTS) WITH TERMINAL BOX

SPECIFICATIONS

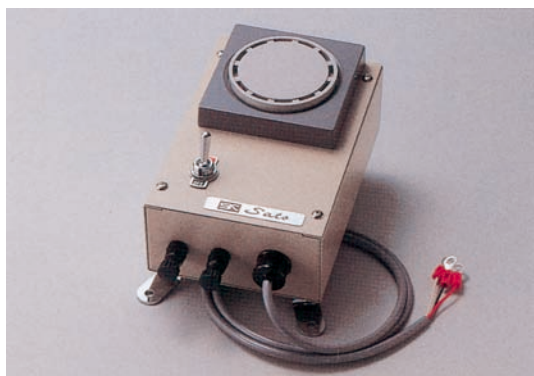
Same as above but with terminal box.

DIAL THERMOMETERS WITH ELECTRIC CONTACTS

○ means available contact arrangements. – not available.

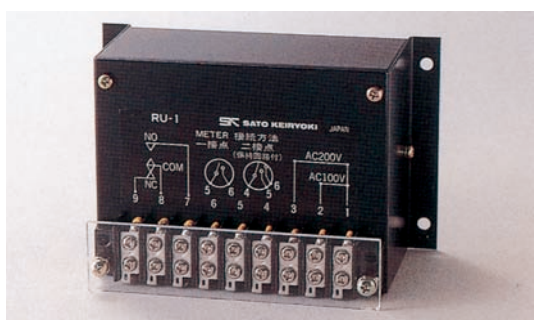
	Dial dia.	Model name	Type number	Contact Point Type			Micro Switch Type	
				Upper or Lower Limit 1 contact point	Upper or Lower Limit 2 contact points	Upper & Lower Limit 1 contact point	1 contact point	2 contact points
*1	φ100mm	BM-T-100E	2685-B	○	–	–	–	–
Wall mounted bottom outlet	φ75mm	LB-75E	3150-L	○	–	○	–	–
		SB-75E	3550-S	○	○	○	–	–
	φ100mm	LB-100SE	3510-L	○	–	–	–	–
Flush mounted back outlet	φ75mm	SB-100SE	3510-S	○	○	○	–	–
		LD-75E	3160-L	○	–	○	–	–
	φ100mm	SD-75E	3560-S	○	○	○	–	–
		LD-100SE	3130-L	○	–	–	–	–
Right stem type	φ100mm S type	SD-100SE	3530-S	○	○	○	–	–
		LAS-100SE	3112-L	○	–	–	–	–
	φ100mm L type	SAS-100SE	3512-S	○	○	○	–	–
		LAL-100SE	3114-L	○	–	–	–	–
	φ100mm T type	SAL-100SE	3514-S	○	○	○	–	–
		LAT-100SE	3115-L	○	–	–	–	–
		SAT-100SE	3515-S	○	○	○	–	–
Water-proof type	φ100mm Tilting type	LAF-100SE	3158-L	○	–	–	–	–
		SAF-100SE	3558-S	○	○	○	–	–
φ130mm w/o terminal box	φ130mm w/o terminal box	LBW-130MS	3094-L	–	–	–	○	–
		SBW-130MS	3494-S	–	–	–	○	○
	φ130mm w/o terminal box	LBW-130EB	3092-L	○	–	○	–	–
		SBW-130EB	3492-S	○	○	○	–	–
*2	φ100mm (d ² G ⁴)	EX-01R	3500-L/3700-S	○	○	○	–	–
		EX-01R-M	3900-S	–	–	–	○	○

*1 Bimetal type. *2 Explosion protected construction type.



No. 3990-60 MODEL BH-8 BUZZER BOX

This is used together with the thermometer with contact point to let the buzzer with large capacity (8 VA at 100 V AC), etc. give alarm when the fixed temperature is reached. Set the adjustable reference pointer with contact point in the indicator at the fixed point by the front knob. When the indicator rises or falls, the contact point of indicator will contact the contact point of the adjustable reference pointer and make electric circuit to let the current flow into the coil of the buzzer, thus sounding alarm. When ordering don't fail to specify power requirements, viz. 100 V AC or 200 V AC as this buzzer is provided with transformer.



RELAY UNIT

This is a relay unit to be combined with the thermometer with upper limit 2 contact points or lower limit 2 contact points to control the temperature to the fixed temperature width. The current which flows into the special circuits of the relay unit (delay circuit and self-hold circuit) becomes weak current and flows into the contact section, so sparks do not occur at the contact section and therefore there are no adhesions or carbons at the contact section. Even if a slight vibration is given to the contact section chattering at the switching action will not occur.

MODEL KR-A2 RELAY UNIT

SPECIFICATIONS

Type: No. 3990-02 KR-A2
Outer dimensions:
120 (W) x 77 (D) x 160 (H) mm
Weight: 1.1 kg

Rated	Breking capacity	
	current (A)	
voltage (V)	resistance load (cos φ = 1)	inductive load (cos φ = 0.4) L/R = 7 mS
100VAC	10	3
200VAC		
100VDC	0.3	0.11
200VDC		

• Specify your power requirements.

MODEL RU-1 RELAY UNIT

SPECIFICATIONS

Type: No. 3990-01 RU-1
Outer dimensions:
126 (W) x 80 (D) x 70 (H) mm
Installation sizes:
116 x 60 (4 x φ4.5 hole) mm
Weight: 0.5 kg

Rated	Breking capacity	
	current (A)	
voltage (V)	resistance load (cos φ = 1)	inductive load (cos φ = 0.4) L/R = 7 mS
250VAC	3 (max. 5)	1 (max. 2)
30VDC	1 (max. 5)	1 (max. 3)

• Specify your power requirements.

SWITCH MODE FOR ALARM (FOR DIAL THERMOMETERS WITH ELECTRIC CONTACTS)

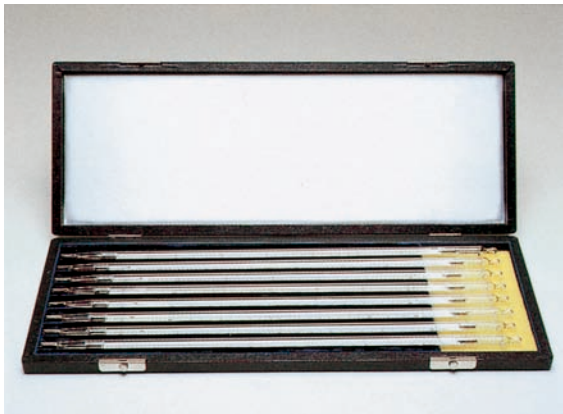
Switch Mode (pointer moves clockwise)	Contact Point System (example for connection)	Type No.	Switch Mode (pointer moves clockwise)	Contact Point System (example for connection)	Type No.
Upper limit 1 contact point	Instrument Power Source C H Buzzer Lamp	CU1	H1 H2	Instrument Power Source C H1 H2 Lamp Buzzer	CU2
Lower limit 1 contact point	Instrument Power Source L C Buzzer Lamp	CL1	L H1 H2	Instrument Power Source C L H1 H2 Lamp Lamp Buzzer	CU2L1
Upper limit 1 contact point Lower limit 1 contact point	Instrument Power Source C L H Buzzer Buzzer	CUL1	L2 L1	Instrument Power Source C L1 L2 Lamp Buzzer	CL2

* In case a buzzer or lamp etc. with large load are used, use a buzzer box (refer to page 42).

SWITCH MODE FOR CONTROL (*1)

Switch Mode (pointer moves clockwise)	Contact Point System + Relay Unit (example for connection) (RU-1) (KR-A2)	Type No.	Micro Switch System	Type No.
Upper limit 1 contact point	Instrument C H Relay Unit Load Power source	CH1RU CH1KR	Red needle Load Power source	MS1
Lower limit 1 contact point	Instrument L C Relay Unit Load Power source	CL1RU CL1KR	Red needle Load Power source	MS1
Upper limit 1 contact point Lower point 1 contact point	Instrument C L M Relay Unit 2 Circuits Load Load Power source	CUL1RU CUL1KR	Green needle Load Load Power source Red needle	MS2
Upper limit 1 contact point Lower limit 1 contact point			Green needle Load Load Power source Red needle H	MS2
H1 H2	Instrument C H1 H2 Relay Unit Load Power source	CU2RU CU2KR	Green needle Load Load Power source Red needle H2	MS2
H1 H2 L	Instrument C L H1 H2 Relay Unit 2 Circuits Load Load Power source	CU2L1RU CU2L1KR		
L2 L1	Instrument C L1 L2 Relay Unit Load Power source	CU2RU CU2KR	Green needle Load Load Power source Red needle L2	MS2

(*1) -1. Specify type of switch mode for alarm in case relay unit is prepared at your end.
-2. RU and KR in the type number represent type (page 42) of relay unit.



**No. 0022 STANDARD THERMOMETER
(Set of 8 in a case)**

Used for calibration and tests of all kinds of thermometers as stable and reliable reference.

- * Dual tubing with a scale plate enclosed
- * Mercury-in-glass thermometers with an icepoint scale
- * Stem length: 400 mm, $\phi 9$ to 10 mm
- * With a calibration certificate issued by manufacturer.

No.	Range	Div.	No.	Range	Div.
0	-50 to 0°C	1/10°	4	150 to 200°C	1/10°
1	0 to 50	"	5	200 to 250	"
2	50 to 100	"	6	250 to 300	"
3	100 to 150	"	7	300 to 360	"

May be sold loose — in a wooden case —



STANDARD THERMOMETER (Set of 8 in a case)

Similar to the above for secondary reference.

No. 0021 Dual Tube Type

In a clear glass outer tube, a mercury filled glass capillary tube and a scale plate are enclosed.

No. 0020 Bar Type

Mercury is filled in the capillary tube in a glass tube. Scale is etched on the surface of the tube.

- * Mercury-in-glass thermometers
- * Stem length: 300 mm, $\phi 6$ to 7 mm in both types
- * With a calibration certificate issued by manufacturer.

No. 0110 ETCHED-STEM THERMOMETER — Total immersion —

- * Mercury filled thermometer and alcohol filled one are available.
- * Scale is etched on the surface of the tube.

Alcohol thermometer

Range	Div.	Length
0 to 100°C	1°	300 mm
"	1/2	"
-20 to 105	1	"
-30 to 100	"	"
-5 to 105	"	"
0 to 50	"	"
"	1/2	"
0 to 150	1	"
0 to 200	"	"
-5 to 35	1/5	"
-30 to 50	1	"
-50 to 50	1	"
-80 to 50	"	"
-100 to 50	"	"

Mercury thermometer

Range	Div.	Length
-30 to 50°C	1°	300 mm
-20 to 50	1/2	"
"	1/5	"
"	1/10	"
-5 to 35	1/5	"
"	1/10	"
0 to 100	1	"
"	1/2	"
"	1/5	"
"	1/10	450 · 600
-20 to 100	1	300
0 to 50	"	"
"	1/2	"
"	1/5	"
"	1/10	"
0 to 150	1	"
0 to 200	"	"
0 to 300	"	"
0 to 360	"	330
0 to 400	"	"
0 to 500	5	300
0 to 500	2	450
0 to 600	2	"
0 to 624	2	"

1/2, 1/5 and 1/10 are precision grade.

**No. 0120 3 INCH IMMERSION THERMOMETER
— 3 inch (76 mm) immersion—**

- * Scale etched and calibrated for 3 inch (76 mm) immersion
- * Mercury filled
- * Stem: 6 to 7 mm ϕ

Range	Div.	Length
-30 to 50°C	1°	300 mm
-10 to 110	"	"
-10 to 150	"	"
-10 to 200	"	350
-10 to 250	"	"
-10 to 300	"	400
-10 to 360	"	"
-10 to 400	"	"

- * Yellow back and white back are available.
- * Alcohol filled thermometer is available.
- * Total immersion is available.

GLASS HYDROMETERS

No. 1102 RELATIVE DENSITY HYDROMETER (Set of 7 in a case)

Type I:

Total length: 300 mm
 Subdivision: 0.002 g/cm³
 standard temperature: 15/4°C
 w/thermometer (0 to 50°C)
 Case size: 195 x 355 x 37 mm
 Total weight: about 0.8 kg

Type II:

Total length: 170 mm
 Subdivision: 0.005 g/cm³
 Standard temperature: 15/4°C
 w/thermometer (0 to 50°C)
 Case size: 85 x 210 x 37 mm
 Total weight: about 0.5 kg

No.	Scale range	No.	Scale range
1	0.700 to 0.850	5	1.400 to 1.600
2	0.850 to 1.000	6	1.600 to 1.800
3	1.000 to 1.200	7	1.800 to 2.000
4	1.200 to 1.400		

No. 1103 STANDARD DENSITY HYDROMETER (Set of 19 in a case)

* With a calibration certificate issued by an authority.

* Total length: 300 mm
 * Subdivision: 0.001 g/cm³
 * Standard temperature: 15/4°C
 * w/thermometer (0 to 50°C) and guide scale
 * Case size: 360 x 575 x 43 mm
 * Total weight: about 2.5 kg

No.	Scale range	No.	Scale range
1	0.700 to 0.760	11	1.300 to 1.360
2	0.760 to 0.820	12	1.360 to 1.420
3	0.820 to 0.880	13	1.420 to 1.480
4	0.880 to 0.940	14	1.480 to 1.540
5	0.940 to 1.000	15	1.540 to 1.600
6	1.000 to 1.060	16	1.600 to 1.660
7	1.060 to 1.120	17	1.660 to 1.720
8	1.120 to 1.180	18	1.720 to 1.780
9	1.180 to 1.240	19	1.780 to 1.850
10	1.240 to 1.300		

No. 1104 RELATIVE DENSITY HYDROMETER (Set of 19 in a case)

Similar to the above for secondary reference standards

Type I:

Total length: 300 mm
 Subdivision: 0.001 g/cm³
 Standard temperature: 15/4°C
 w/thermometer (0 to 50°C) and guide scale
 Case size: 360 x 575 x 43 mm
 Total weight: about 2.5 kg

Type II:

Total length: 160 mm
 Subdivision: 0.002 g/cm³
 Standard temperature: 15/4°C
 w/thermometer (0 to 50°C) and guide scale
 Case size: 215 x 450 x 37 mm
 Total weight: about 1.0 kg

No. 1105 SUPPLEMENT TO STANDARD HYDROMETER

As the supplement to standard hydrometer (set of 19) the following measurements are possible.

Type I: Length: 300 mm Min. scale: 0.001
 Type II: Length: 150 to 160 mm Min. scale: 0.002

No.	Scale range	No.	Scale range
01	0.600 to 0.650	02	0.650 to 0.700
20	1.850 to 1.920	21	1.920 to 2.000

No. 1111 RELATIVE DENSITY HYDROMETER FOR PETROLEUM (Set of 10 in a case)

* Based on JIS K 2249

* Reading is in the bottom of the meniscus

* Standard temperature: 15°C

* With a calibration certificate by manufacturer

* With thermometer

Type I-A (JC-9100)

Total length: 335 mm
 Subdivision: 0.0005 g/cm³
 Case: 300 x 370 x 40 mm
 Total weight: 1.1 kg

Type I-B (JC-9120)

Total length: 270 mm
 Subdivision: 0.001 g/cm³
 Case: 300 x 330 x 40mm
 Total weight: 1.0 kg

Type I-A (JC-9140)

Total length: 190 mm
 Subdivision: 0.001 g/cm³
 Case: 220 x 280 x 35 mm
 Total weight: 0.6 kg

No.	Scale range	No.	Scale range
1	0.600 to 0.650	6	0.850 to 0.900
2	0.650 to 0.700	7	0.900 to 0.950
3	0.700 to 0.750	8	0.950 to 1.000
4	0.750 to 0.800	9	1.000 to 1.050
5	0.800 to 0.850	10	1.050 to 1.100

No. 1113 HYDROMETER FOR GASOLINE (Set of 2)

This is suitable for precision measurement of gasoline.

Length: 300 to 310 mm Min. scale: 0.001

No.	Scale range
1	0.690 to 0.830
2	0.790 to 0.930

Hydrometers based on A.S.T.M. and A.P.I. standards are available.

No. 1114 LPG HYDROMETER (Complete in a case)

This is used to measure specific gravity of liquefied petroleum gas and know important things, viz. mass, volume or quality which will be the base for business transaction or taxation. Our LPG hydrometers are manufactured based on N.G.A.A. and ASTM.

Length: approx. 365 mm Min. scale: 0.001
 Enclosed thermometers: 1 to 32°C (1/2 div.) (Type I and Type II)
 -10 to 40°C (1/1 div.) (Type S)

Type	Scale range	Pressure resistivity
I JIS	0.500 to 0.600	15 kg/cm ²
II JIS	0.500 to 0.650	10 kg/cm ²
S	0.450 to 0.550	15 kg/cm ²

GLASS HYDROMETERS

No. 1121 AKANUMA MARINE HYDROMETER

Used to measure specific gravity of sea water with precision.

Type	Scale range	Min. scale	Length
SA	1.000 to 1.030	0.0005	260 mm
A	1.010 to 1.030	0.0005	260 mm
B	1.020 to 1.030	0.0002	300 mm
C	1.000 to 1.020	0.0002	260 mm

No. 1122 JIS STANDARD HYDROMETER FOR SOIL

Widely used for testing soil.
Conforming to "Testing Method of Granulation of Soil".

Scale range	Min. scale	Length
0.995 to 1.050	0.001	280 mm

No. 1125 HYDROMETER FOR BATTERY (with syringe)

Type	Scale range	Min. scale	Length
I	1.100 to 1.300	0.01	hydrometer: 120 mm syringe: 400 mm
II	"	"	hydrometer: 95 mm syringe: 320 mm

No. 1132 HYDROMETER FOR HEAVY LIQUID

Type	Scale range (Dual scale)	Min. scale	Length
I	Specific gravity 1.000 to 2.000 Baume degree 0 to 72°	0.2 1°	250 mm
II	"	"	200 mm

No. 1133 HYDROMETER FOR LIGHT LIQUID

Type	Scale range (Dual scale)	Min. scale	Length
I	Specific gravity 0.700 to 1.000 Baume degree 70 to 0°	0.2 1°	250 mm
II	"	"	200 mm

No. 1141 ALCOHOLOMETER (Set of 5 in a case) (HYDROMETER FOR ALCOHOL)

Length: 180 mm Min. scale: 1

No.	Scale range	No.	Scale range
1	0 to 20	4	60 to 80
2	20 to 40	5	80 to 100
3	40 to 60		

No. 1142 ALCOHOLOMETER (Set of 10 in a case) – precision type –

* Available to issue calibration certificate upon request.

Type I (JC-9420)

Total length: 280 mm Min. scale: 0.1
Total weight: 1.1 kgs

Type II (JC-9440)

Total length: 220 mm Min. scale: 0.1
Total weight: 1.0 kgs

No.	Scale range	No.	Scale range
1	0 to 10	6	50 to 60
2	10 to 20	7	60 to 70
3	20 to 30	8	70 to 80
4	30 to 40	9	80 to 90
5	40 to 50	10	90 to 100

No. 1151 HYDROMETER FOR SUGAR (Set of 3 in a case)

Length: 210 mm Min. scale: 0.5

No.	Scale range	No.	Scale range
1	0 to 30	3	60 to 100
2	30 to 60		

No. 1152 HYDROMETER FOR SUGAR (Set of 10 in a case) – precision type –

Length: 300 mm Min. scale: 0.1 or 0.2

No.	Scale range	No.	Scale range
1	0 to 10	6	50 to 60
2	10 to 20	7	60 to 70
3	20 to 30	8	70 to 80
4	30 to 40	9	80 to 90
5	40 to 50	10	90 to 100

No. 1161 LACTOMETER (HYDROMETER FOR MILK)

Length: 240 mm (w/o thermometer)
300 mm (w/thermometer – range: 0 to 30°C)
Range: 15 to 40° Min. scale: 1

No. 1164 BRIX SCALE (BAUME) – for sugar

Length: 220 mm Min. scale: 1°
Range: 0 to 50°

No. 1171 SALINOMETER SCALE (BAUME)

Length: 180 mm Min. scale: 1°
Range: 0 to 30°

No. 1173 URINOMETER

TYPE I: 1.000 to 1.050 Min. scale: 0.002 Length: 160 mm
TYPE II: 1.000 to 1.050 Min. scale: 0.005 Length: 110 mm

No. 1178 BAUME HEAVY SCALE WITH 10°

Length: approx. 300 mm Min. scale: 0.2°

No.	Scale range	No.	Scale range
1	0 to 10	4	30 to 40
2	10 to 20	5	40 to 50
3	20 to 30	6	50 to 60