

# FILLED TYPE THERMOMETERS

## SM4/SA4(Ø100) & SM6/SA6(Ø150)

### Technical Data

**Remote mounting type**

**Material of case & cover:** 316 stainless steel, option available

**Material of sensor bulb capillary tube, flex tube:** SS304, SS316, and others available

**Lens:** Glass, safety glass available

**Temp range:** -200~+650°C available

**Housing enclosure:** IP66, liquid filled available

**Accuracy:** ±1% (FS)

**Capillary tube length limited:**

liquid filled type: 10M

gas filled type: max. 50M

option available

**Stem dimensions:** Ø 6, 8, 10, 12mm available

**Process connection:** 1/2"NPT standard, other available

**Over range protection:** 130% F.S.

**Contact type limit switch:** available 7 functions for usage.



**SM TYPE**  
(Wall mounting)

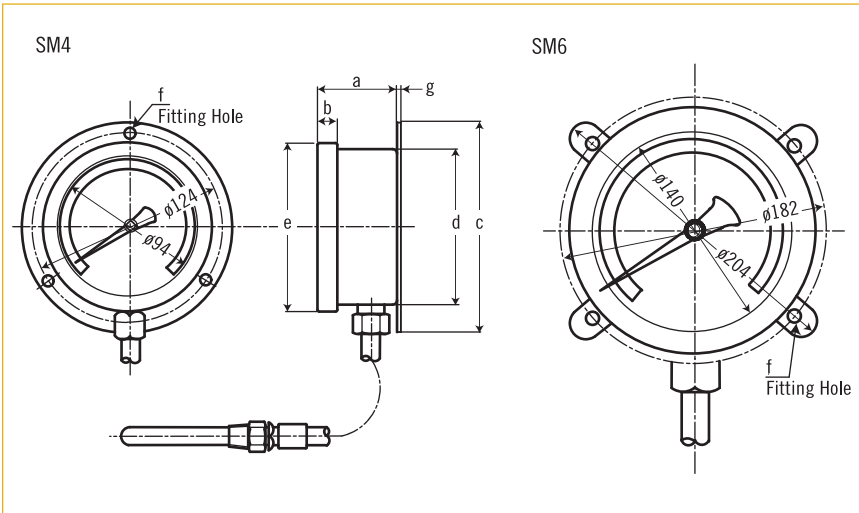
**SA TYPE**  
(Panel mounting)

**Approvals:**



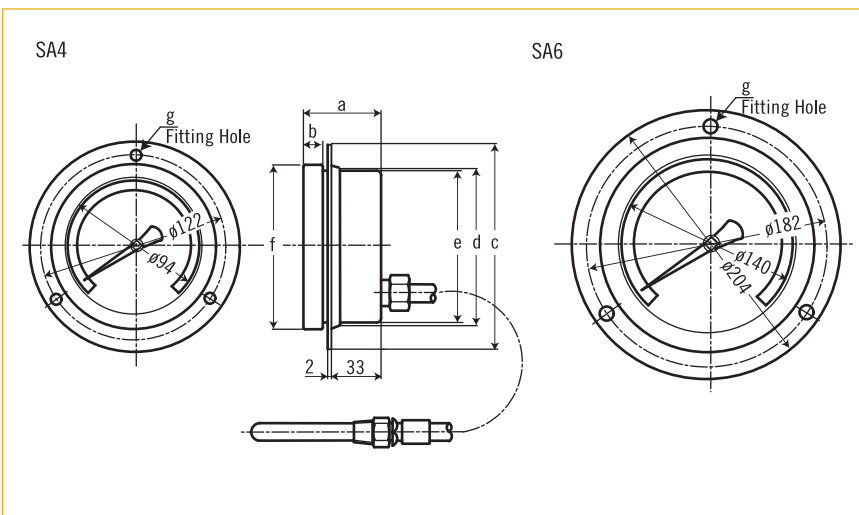
### Dimensions

unit=mm



Symbol	a	b	c	d	e	f	g
Model SM4	51	13	138	102	113	3-Ø5.5	9
Model SM6	52	15	204	153	165	4-Ø8.0	2

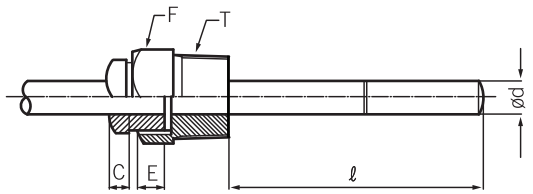
\*Sensor bulb and connection consult to factory.  
\*Remote capillary length: Maximum length 50M



Symbol	a	b	c	d	e	f	g
Model SA4	54	13	134	107	102	113	3-Ø5.5
Model SA6	54	15	204	153	153	165	3-Ø7.0

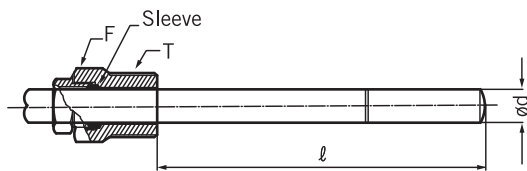
\*Sensor bulb and connection consult to factory.  
\*Remote capillary length: Maximum length 50M

### Connection Type



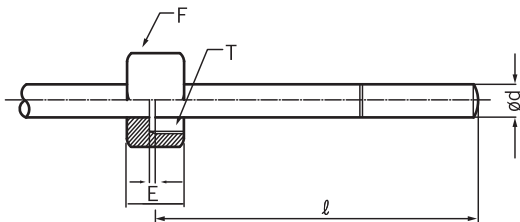
**(A) Rotary Thread Type (Male thread)**

(The male thread position is immobile, but rotation 360° available.)



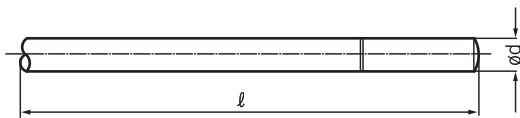
**(B) Slide Thread Type  
(Length "l" changed available.)**

(The slide threaded can be moved up and down, and the length of sensor can be adjusted by user.)



**(C) Rotary Thread Type (Female thread)**

(The female thread position is immobile, but rotation 360° available.)



**(D) Non Thread Type**

T: Process connection  
E: Stop plate for (rotary & rotation style)  
F: Hexagonal head  
l: Sensor length  
d: Sensor dimension

### Table for Range and Insertion

LIQUID FILLED TYPE						
Standard Scale Range (°C)	Minor Division (°C)		Minimum Insertion Length (mm)			
			Outer Diameter of Stem			
	Ø100	Ø150	Ø6	Ø8	Ø10	Ø12
-30~+50	1	1	135	91	53	37
-30~+100	2	2	89	61	38	28
-10~+50	1	1	175	116	66	45
-10~+100	2	2	102	70	42	31
0~50	1	1	207	137	76	52
0~80	1	1	135	91	53	37
0~100	1	1	111	75	45	33
0~120	2	2	95	65	40	29
0~150	2	2	79	55	34	26
0~200	2	2	63	44	29	23
0~250	5	5	53	38	26	21
0~300	5	5	47	34	24	20
0~400	5	5	39	29	21	18

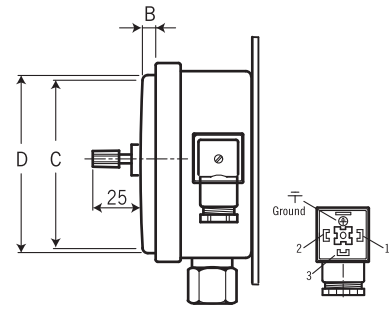
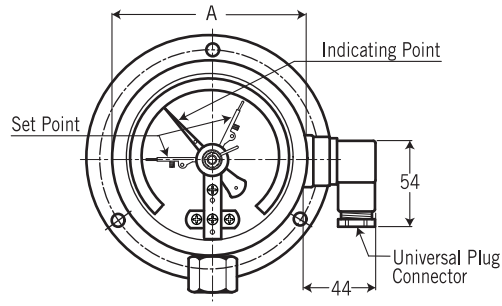
GAS FILLED TYPE		
Standard Scale Range (°C)	Minor Division (°C)	
	Ø100	Ø150
-200~+50	5	5
-200~+100	5	5
-200~+150	5	5
-200~+200	5	5
-100~+100	2	2
-100~+150	5	5
-100~+200	5	5
-50~+300	5	5
-50~+400	5	5
-50~+500	10	10
-50~+600	10	10
0~400	5	5
0~500	10	10
0~600	10	10

Minimum Stem Length		
mm	Ød	
Minimum length	Ø10	Ø12
	270	200

**OPTION.**

1. Please note the minimum insertion length is not including the thread.
2. Special Range / Scale / Stem Diameter / Length are available upon request.

Contact Type Limit Switch (Platinum Contact) Assemblies



	A	B	C	D	
∅100	114	9	84	88	unit=mm

Limit Switch Contact Rating

CONTACT MODE	MS-SERIES MAGNETIC SNAP CONTACT			
	AC 220V	AC 110V	DC 200V	DC 100V
VOLTAGE	AC 220V	AC 110V	DC 200V	DC 100V
LOADING CURRENT	0.2A	0.4A	0.01A	0.02A

LIMIT SWITCH FUNCTION MODE

WIRE DRAWING	CONTACT FUNCTION		CONTACT TYPE
	SINGLE CONTACT		MAGNETIC SNAP-ACTION
	Contact ON When pointer clockwise reaches and passed set point.		MS1
	Contact OFF When pointer clockwise reaches and passed set point.		MS2
TWO CONTACTS			
	Common pole: 3 1st and 2nd contact ON When pointer clockwise reaches and passed each set point.		MS11
	Common pole: 3 1st contact OFF 2nd contact ON When pointer clockwise reaches and passed each set point.		MS21
	Common pole: 3 1st and 2nd contact OFF When pointer clockwise reaches and passed each set point.		MS22

### Ordering Information

Model	SM4 (ø100)	SM6 (ø150)	SA4(ø100)	SA6(ø150)			
	Code	Lens Material					
	A	Acrylic (only for C/W limit switch type)		G	Glass	S	Safety Glass
	Code	Connection Type					
	A	Rotary Thread Type	C	Female Thread Type	O	Option	
	B	Slide Thread Type	D	Non Thread Type			
	Code	Capillary Length					
		Please fill in the requested length. (e.g. 3M)					
	Code	Stem Diameter					
		(1) ø6 (2) ø8 (3)ø10 (4)ø12					
	Code	Stem Length					
	Refer to the Table for Range and Insertion, directly fill in request length (mm)						
Code	Process Connection						
	(A) 3/8" NPT (B) 1/2" NPT (C) 1/4" NPT (D) 3/8"PF (E) 1/2"PF (F)1/4"PF (O) Option						
Code	Scale Range						
	Refer to the Scale Range Table. Fill in the request range.						
Code	Contact Type Limit Switch						
	Please refer to limit switch function mode, or (O) for without limit switch.						
<b>Complete ordering code</b>							

Ordering information Sample:

Model	Lens Material	Connection Type	Capillary Length	Stem Diameter	Stem Length	Process Connection	Scale Range	Contact Type Limit Switch
SM4	S	A	3M	ø6	100mm	B	0-100°C	MS12