

Gas Actuated Thermometers

Process Industry Series • Model 73
with Surface-Mounted Contact Bulb

Thermometers

Service intended

Temperature measurement without contact with media, in chemical process, petroleum and food industry. The instruments meet the highest standards of measurement technique.

Nominal size

100 and 160 mm

Temperature element

Inert gas expansion system (non-toxic)

Accuracy

Class 1 per DIN EN 13 190 with thermal balance

Working range

Permanent (1 year): measuring range per DIN EN 13 190

Short time (24 h max.): scale range per DIN EN 13 190

Nominal use

DIN EN 13 190

Ingress protection

IP 56 / IP 65 per EN 60 529 / IEC 529

IP 65 per EN 60 529 / IEC 529 for gauges with alarm contacts

Standard features

With fixed distance tube (adjustable case) or distant reading (capillary)

Surface-mounted contact bulb

For external mounting on pipes or tanks

Surface-mounted contact bulb 120 mm, stainless steel 1.4571

Case material

Stainless steel

Bezel

Cam ring (bayonet type) bezel, natural finish stainless steel

Distance tube

Length 100 mm, 12 mm diameter, stainless steel 1.4571

Capillary

Length to user specifications, 2 mm diameter, stainless steel 1.4571, bending radius no less than 6 mm

Dial

White aluminium with black lettering per DIN EN 13 190

Pointer

Adjustable black aluminium pointer

Window

Laminated safety glass

Optional extras

- Other scale ranges ¹⁾
- Ingress protection IP 66 (not for gauges with alarm contacts)
- Liquid damping ¹⁾
- Scale °F, K; dual scale °C/°F
- Window of non-splintering plastic
- Other location of distance tube or capillary ¹⁾
- Armoured or coated capillary
- Alarm contacts (see data sheet AC 08.01)

¹⁾ after technical testing



Scale, measuring ranges ¹⁾, limits of error per DIN EN 13 190, class 1

Scale range °C	Scale spacing °C	Measuring range ²⁾ °C	Limit of error °C
- 80 ... + 60	2	- 60 ... + 40	2
- 60 ... + 40	1	- 50 ... + 30	1
- 40 ... + 60		- 30 ... + 50	
- 30 ... + 50		- 20 ... + 40	
- 20 ... + 60		- 10 ... + 50	
- 20 ... + 80		- 10 ... + 70	
0 ... 60		+10 ... + 50	
0 ... 80		+10 ... + 70	
0 ... 100		+10 ... + 90	
0 ... 120	2	+ 10 ... + 110	2
0 ... 160		+ 20 ... + 140	
0 ... 200		+ 20 ... + 180	
0 ... 250	5	+ 30 ... + 220	2.5
0 ... 300		+ 30 ... + 270	5

¹⁾ The measuring range is indicated on the dial by two triangular marks.
Within this range the stated limit of error is valid according to DIN EN 13 190.

Models

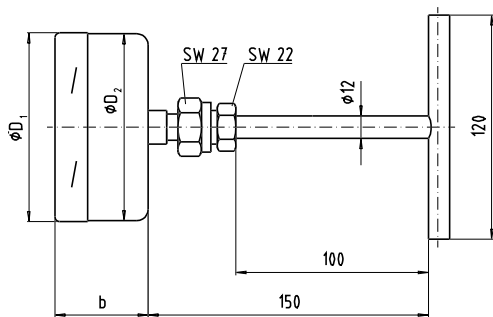
Model	Nominal size	Location of distance tube or capillary	Type of mounting
A 7360	100	Distance tube centre back, case rotatable through approx. 350°	Self-holding via distance tube
A 7361	160		
R 7362	100	Distance tube radial bottom, case rotatable through approx. 350°	
R 7363	160		
S 7364	100	Distance tube centre back, case rotatable through approx. 350° and distance tube adjustable every angle	
S 7365	160		
H 7366	100	Capillary entry radial bottom	3-hole surface mounting flange
H 7367	160		Surface mounting bracket
M 7368	100		
M 7369	160		
V 7370	100	Capillary entry centre back	3-hole panel mounting flange
V 7371	160		Triangular bezel
D 7372 ¹⁾	100		
D 7373 ¹⁾	160		

1) not suitable for alarm contacts

Dimensions

Model A 7360, A 7361

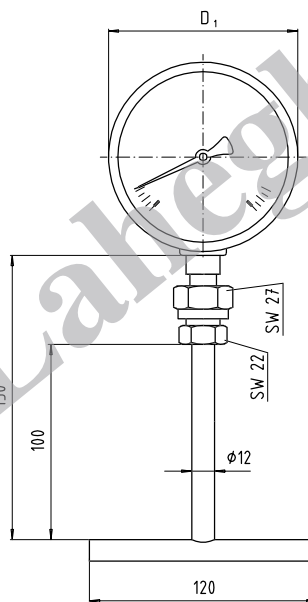
Distance tube centre back,
case rotatable through approx. 350°



3107 884

Model R 7362, R 7363

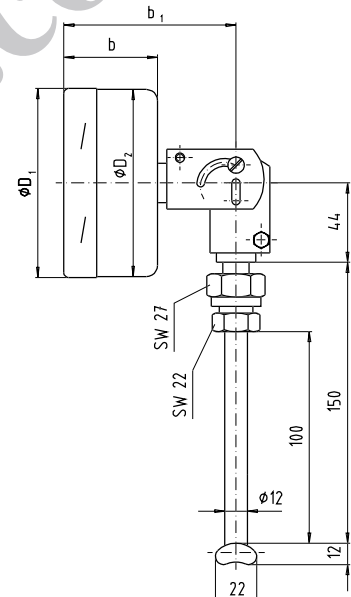
Distance tube radial bottom,
case rotatable through approx. 350°



3107 892

Model S 7364, S 7365

Distance tube centre back, case
rotatable through approx. 350° and
distance tube adjustable every angle



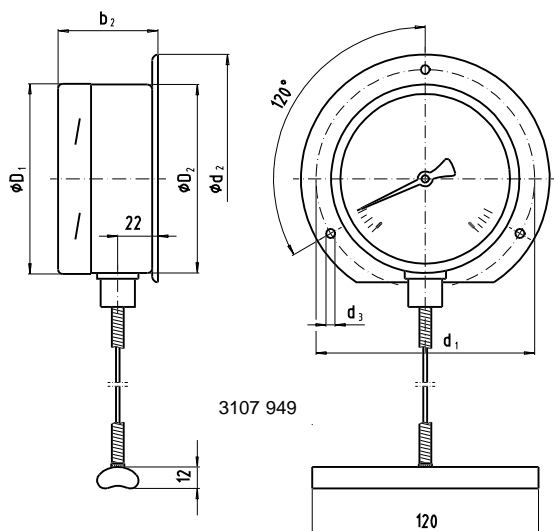
3107 906

Model	Nominal size	Dimensions [mm]								Weight [kg]
		alarm contacts of model 811, 821 or 831						D ₁	D ₂	
		without		1 or 2		3				
		b	b ₁	b	b ₁	b	b ₁			
A 7360	100	50	—	88	—	—	—	101	99	0.800
A 7361	160					97		161	159	0.900
R 7362	100	50	—	88	—	—	—	101	99	0.800
R 7363	160					97		161	159	0.900
S 7364	100	50	93	88	131	—	—	101	99	0.900
S 7365	160					97	140	161	159	1.000

Dimensions

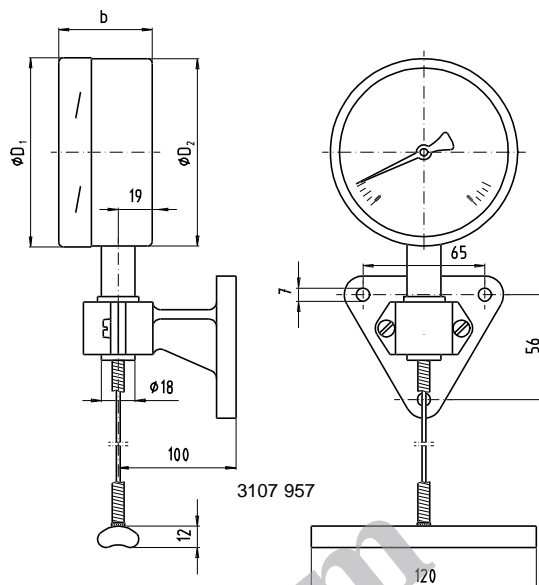
Model H 7366, H 7367

3-hole surface mounting flange



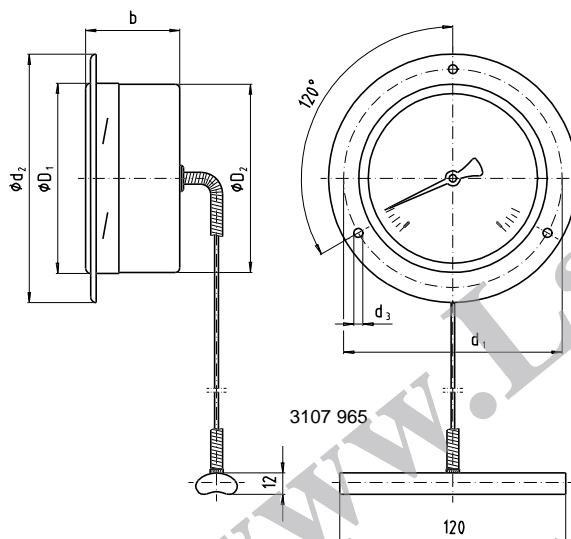
Model M 7368, M 7369

Surface mounting bracket



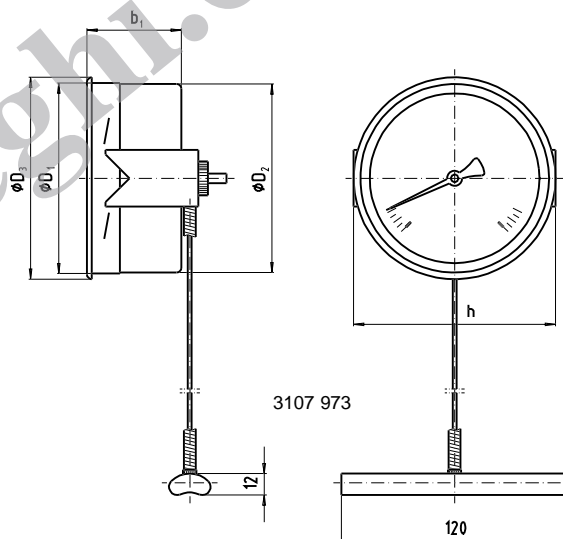
Model V 7370, V 7371

3-hole panel mounting flange



Model D 7372, D 7373

Triangular bezel ¹⁾



Model	Nominal size	Dimensions [mm]														Weight [kg]	
		alarm contacts of model 811, 821 or 831								d ₁	d ₂	d ₃	D ₁	D ₂	D ₃		h
		without			1 or 2		3										
		b	b ₁	b ₂	b	b ₂	b	b ₂									
H 7366	100	—	—	53	—	91	—	—	116	132	4.8	101	99	—	—	0.800	
H 7367	160							100	178	196	5.8	161	159			1.000	
M 7368	100	50	—	—	88	—	—	—	—	—	—	101	99	—	—	0.800	
M 7369	160						97					161	159			1.000	
V 7370	100	50	—	—	88	—	—	—	116	132	4.8	101	99	—	—	0.800	
V 7371	160						97		178	196	5.8	161	159			1.000	
D 7372 ¹⁾	100	—	50	—	—	—	—	—	—	—	—	101	99	107	107	0.800	
D 7373 ¹⁾	160											161	159	166	172	1.000	

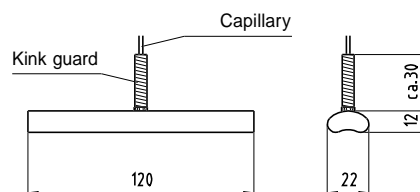
¹⁾ not suitable for alarm contacts

Mounting instructions

General

The surface-mounted contact bulb has been designed for external mounting on pipes and tanks.

The contact bulb is to be mounted so that it lays over the measuring point down its full length. Basic requirements to ensure perfect measurement results are good thermal contact between the surface-mounted contact bulb and the outside wall of the pipe or tank with minimal heat loss to the ambient from the surface-mounted contact bulb and measuring point.



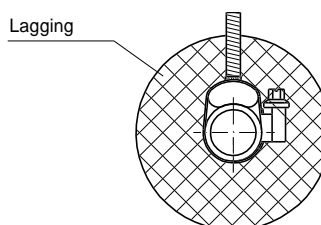
3107 876

Mounting on pipes

The geometry of the contact bulb has been designed for pipes with external diameters between 20 and 160 mm. Pipe clips are adequate for fastening the surface-mounted contact bulb to the pipe. The surface-mounted contact bulb should have direct metallic contact with the measuring point and have firm contact with the surface of the pipe.

In so far as temperatures under 200 °C are to be expected a heat conductive paste can be used to optimize the heat transmission between surface-mounted contact bulb and pipe. Lagging must be applied where the surface-mounted contact bulb has been mounted to avoid error due to heat loss.

This lagging must have sufficient temperature resistance and is not provided with the instrument.



3107 922

Pipe clip mounting

Mounting on tanks

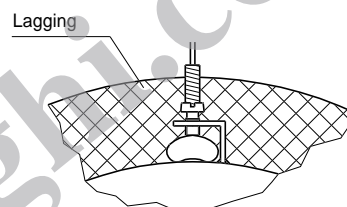
The geometry of the contact bulb has been designed for tanks with an external radius up to 80 mm. If the mounting point of the surface-mounting contact bulb on the tank has an external radius greater than 80 mm, we recommend the use of an intermediate piece designed for the respective tank diameter made of a material with good thermal conductivity.

The contact bulb should be fastened to the tank by means of an angle bracket with clamping screws, or any similar method.

The surface-mounted contact bulb should have direct metallic contact with the measuring point and have firm contact with the surface of the tank. In so far as temperatures under 200 °C are to be expected a heat conductive paste can be used to optimize the heat transmission between surface-mounted contact bulb and tank.

Lagging must be applied where the surface-mounted contact bulb has been mounted to avoid error due to heat loss.

This lagging must have sufficient temperature resistance and is not provided with the instrument.



3107 930

Angle bracket mounting

Ordering information

Model / Nominal size / Scale range / Location of distance tube or capillary / Type of mounting / Length of capillary / Optional extras required

Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing. Modifications may take place and materials specified may be replaced by others without prior notice.



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