TM 73.03

Gas Actuated Thermometers

Process Industry Series • Model 73
Distant Reading with Capillary

Thermometers

Service intended
All stainless steel thermometer. Suitable for corrosive media and environments 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

Working range
Permanent (1 year): measuring range per DIN EN 13 190
Short time (24 h max.): scale range per DIN EN 13 190

Pressure rating of stem
25 bar maximum

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

Distant reading capillary entry
Centre back or radial bottom

Case material
Stainless steel

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

Connection
Plain stem, stainless steel 1.4571

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

Stem
8 mm diameter, stainless steel 1.4571
The active length of the stem depends upon the diameter and the scale range.

Dial
White aluminium with black lettering per DIN EN 13 190

Pointer
Adjustable black aluminium pointer

Window
Laminated safety glass

Mounting provisions
- 3-hole surface mounting flange (code H), stainless steel
- Surface mounting bracket made of die cast aluminium (code M)
- 3-hole panel mounting flange (code V), stainless steel
- Triangular bezel with clamp (code D), stainless steel

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

Scale range °C	Scale spacing °C	Measuring range [1] °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
0 ... 400		+ 50 ... + 350	
0 ... 500		+ 50 ... + 450	
0 ... 600	10	+100 ... + 500	10
0 ... 700		+100 ... + 600	

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	Capillary entry
H 7308	100	Radial bottom
H 7309	160	
M 7310	100	
M 7311	160	
V 7312	100	Back
V 7313	160	
D 7340 [1)]	100	
D 7350 [1)]	160	

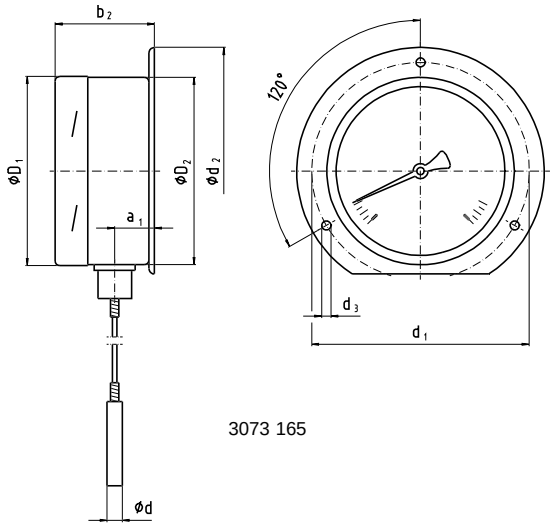
1) not suitable for alarm contacts

Optional extras

- Liquid damping
- Ingress protection IP 66 (not for gauges with alarm contacts)
- Scale °F, K; dual scale °C/°F
- Window of non-splintering plastic
- Stem 6, 10 or 12 mm diameter
- Armoured or coated capillary
- Capillary entry other than radial bottom
- Thermowells per DIN 43 772 or to user specifications
- Alarm contacts (see data sheet AC 08.01)
- Surface mounting bracket made of other material
- Other mounting provisions

Dimensions in mm

3-hole surface mounting flange (H)



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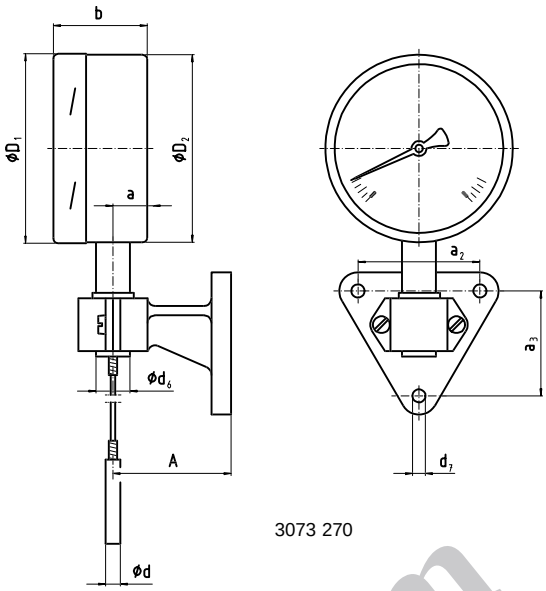
Surface mounting bracket (M)



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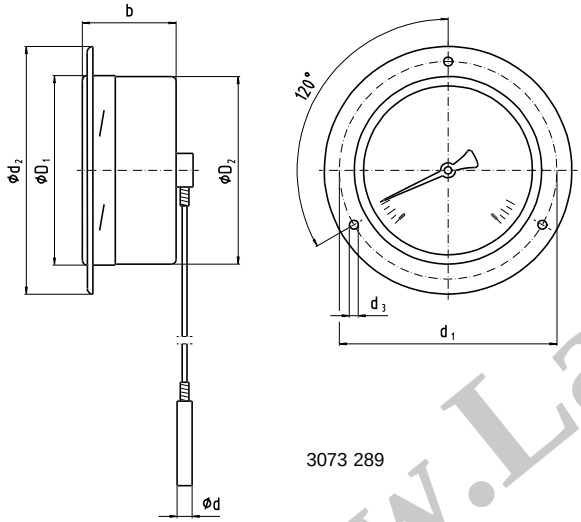
3-hole panel mounting flange (V)



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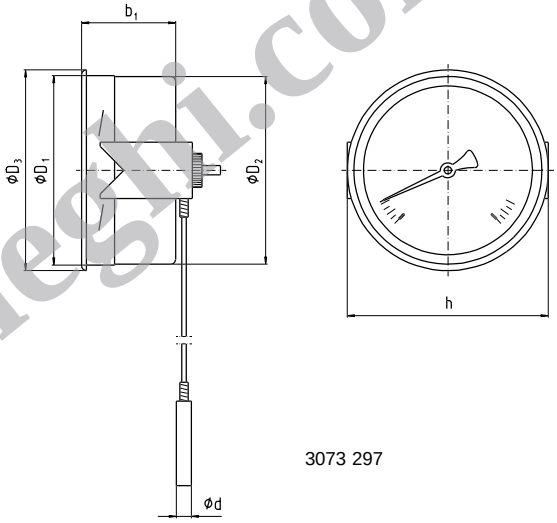
Triangular bezel (D) [1]



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Nominal size	Dimensions in mm											
						alarm contacts of model 811, 821, 830 E or 831						
						without			1 or 2		3	
	A	a	a_1	a_2	a_3	b	b_1	b_2	b	b_2	b	b_2
100	100	19	22	65	56	50	51	53	88	91	97	100
160												

Nominal size	Dimensions in mm										Weight in kg
	d	d_1	d_2	d_3	d_6	d_7	D_1	D_2	D_3	h	
100	8	116	132	4.8	18	7	101	99	107	107	1.400
160		178	196	5.8			161	159	166	172	1.800

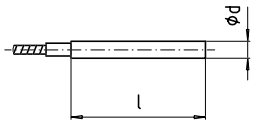
1) not suitable for alarm contacts

Design of connection

Dimensions in mm

Connection 1

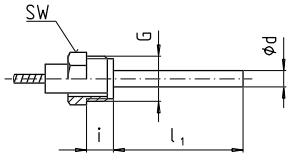
Plain stem
Length of stem l = 140, 200, 240 or 290 mm
Stainless steel 1.4571
To suit compression fitting of connection no. 4



Connection 2

Male nut G ½ B
Length of stem l_1 = 80, 140, 180 or 230 mm
Stainless steel 1.4571

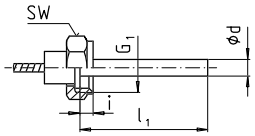
Male thread G	SW	i
G ½ B	27	20



Connection 3

- Union nut G ½, G ¾ or M 24 x 1.5
  Length of stem l_1 = 89, 126, 186, 226 or 276 mm
  Stainless steel 1.4571

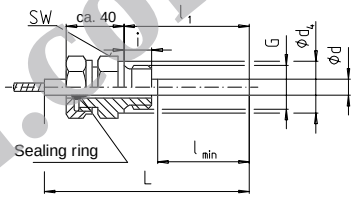
Female thread G_1	SW	i
G ½	27	8.5
G ¾	32	10.5
M 24 x 1.5	32	13.5



Connection 4

Compression fitting (sliding on stem)
G ½ B, G ¾ B, M 18 x 1.5, ½ NPT or ¾ NPT
Minimum insertion length l_{min} approx. 60 mm
Length of stem l_1 = variable
Length L = l_1 + 40 mm
Stainless steel 1.4571

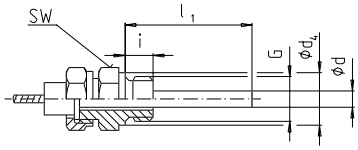
Male thread G	SW	d_4	i
G ½ B	27	26	14
G ¾ B	32	32	16
M 18 x 1.5	24	23	12
½ NPT	22	–	19
¾ NPT	30	–	20



Connection 5

- Union nut G ½
  with fitting G ½ B, G ¾ B, ½ NPT or ¾ NPT
  Length of stem l_1 = 63, 100, 160, 200 or 250 mm
  Stainless steel 1.4571
- Union nut M 24 x 1.5 with fitting M 18 x 1.5

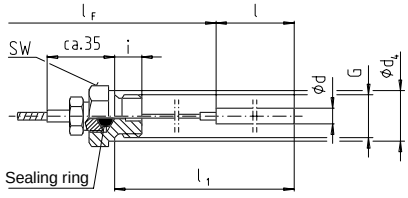
Male thread G	SW	d_4	i
G ½ B	27	26	14
G ¾ B	32	32	16
M 18 x 1.5	24	23	12
½ NPT	22	–	19
¾ NPT	30	–	20



Connection 6

Compression fitting (sliding on capillary)
G ½ B, G ¾ B, ½ NPT or ¾ NPT
Length of stem l = 100 mm (other on inquiry)
Stainless steel 1.4571

Male thread G	SW	d_4	i
G ½ B	27	26	14
G ¾ B	32	32	16
½ NPT	22	–	19
¾ NPT	30	–	20



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Ordering information

Model / Nominal size / Scale range / Location of capillary entry / No. and size of connection / Mounting provisions / Length of stem l, l_1 / Length of capillary l_F / 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.

WIKA Alexander Wiegand GmbH & Co. KG
Alexander-Wiegand-Straße · 63911 Klingenberg
Tel.: (0 93 72) 132-0 · Fax: (0 93 72) 132-406
http://www.wika.de · E-mail: info@wika.de

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