Expansion Thermometers
Model 70, with Stainless Steel Case and Capillary

Applications

- General-purpose temperature measuring instruments for gaseous, liquid and highly-viscous process media in harsh working environments
- Refrigeration industry
- Machine building

Special Features

- Case and stem made of stainless steel
- Design per DIN EN 13 190
- With capillary

Fig. left: Expansion Thermometer Model M70.50.100
Fig. right: Expansion Thermometer Model B70.50.063

Description

Nominal size in mm
63, 100, 160

Measuring principle
Bourdon tube system

Fill medium
Xylol or silicon oil

Accuracy class
Class 2

Rated operating ranges and conditions
DIN EN 13 190

Ingress protection
IP 56 per EN 60 529 / IEC 529

Capillary entry
Lower or back

Case
Stainless steel

Bezel ring
Stainless steel

Connection
Plain, stainless steel 1.4571

Capillary
Length to customer specifications (max. 10 m), Ø 2 mm, stainless steel 1.4571, bending radius not less than 6 mm

Stem
Ø 8 mm, stainless steel 1.4571

WIKA
Part of your business

Active length of sensor
Depending on Ø d and scale range

Dial
Aluminium, white, black lettering

Pointer
Aluminium, black

Window
NS 100, 160: Instrument glass
NS 63: Transparent plastic

Mounting options
- Surface mounting flange (H), stainless steel
- Surface mounting bracket (M), aluminium die cast
- Panel mounting flange (V), stainless steel
- Triangular bezel with bracket (B), stainless steel

Scale ranges, Measuring ranges [1)]

Scale range in °C	Measuring range in °C	Limit error ± °C	Scale division in °C
-60 ... +40	-50 ... +30	2	1
-40 ... +60	-30 ... +50	2	1
-30 ... +50	-20 ... +40	2	1
-20 ... +60	-10 ... +50	2	1
-20 ... +80	-10 ... +70	2	1
0 ... +60	+10 ... +50	2	1
0 ... +80	+10 ... +70	2	1
0 ... +100	+10 ... +90	2	1
0 ... +120	+10 ... +110	4	2
0 ... +160	+20 ... +140	4	2
0 ... +200	+20 ... +180	4	2
0 ... +250	+30 ... +220	5	5

Other scale ranges on request.

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

Options

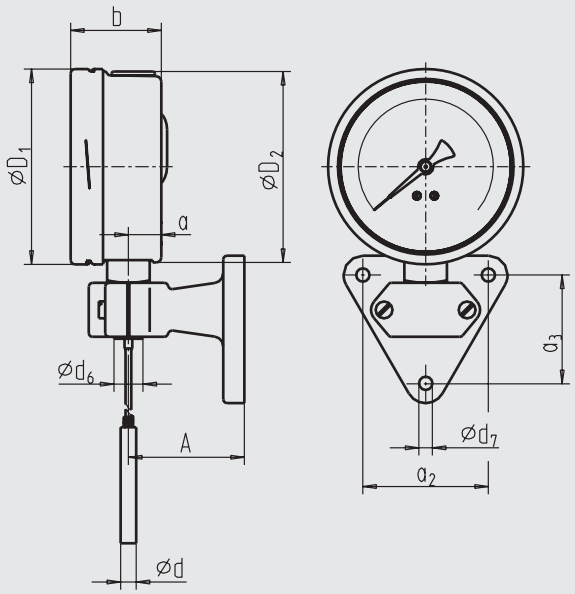
- Scale range °F, °C/°F (dual scale)
- Laminated safety glass, clear plastic
- Ambient temperature compensation
- Accuracy class 1.0
- Thermowell per DIN or to customer specification
- Surface mounting bracket from other materials and in other lengths (A)
- Liquid filling with
  NS 100: Model X70.53.100
  NS 160: Model X70.53.160
- Designs per DIN EN ISO 13485, medical applications on request
- Model 70 with micro switch see WIKA data sheet TV 28.01

Models

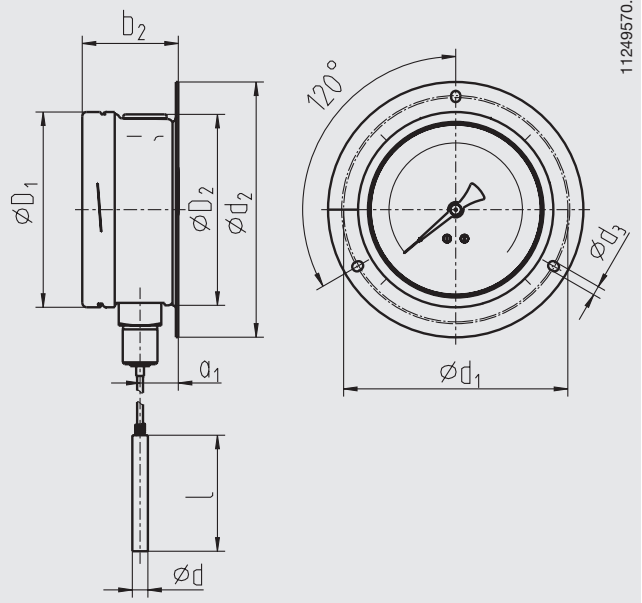
Model	NS	Capillary entry	Mounting option
B70.50. **B70.53.**	063	back	Triangular bezel with bracket
H70.50. **H70.53.**	063	lower	Surface mounting flange
	100		
	160		
M70.50. **M70.53.**	063	lower	Surface mounting bracket
	100		
	160		
V70.50. **V70.53.**	063	back	Panel mounting flange
	100		
	160		

Dimensions in mm

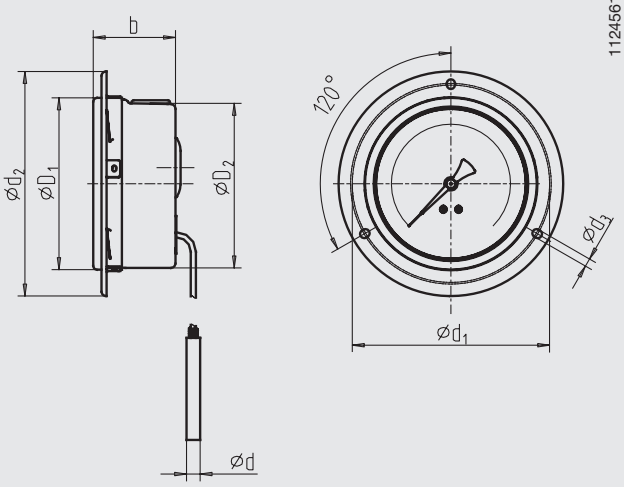
Model M70, surface mounting bracket



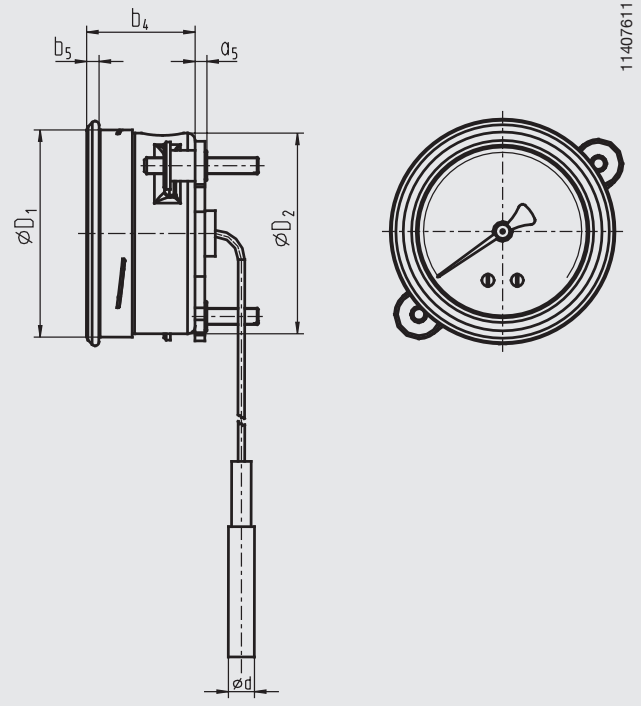
Model H70, surface mounting flange



Model V70, Panel mounting flange



Model B70, triangular bezel with bracket



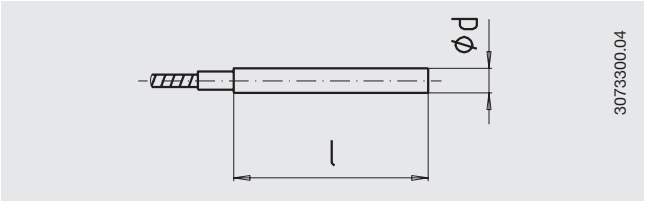
NS	Dimensions in mm																			Weight in kg
	a	a_1	a_2	a_3	a_4	a_5	b	b_2	b_4	b_5	d	d_1	d_2	d_3	d_6	d_7	A	D_1	D_2	
63	9.6	13	65	56	71	4	28	32	33.5	4	8	75	85	3.6	18	7	60	63.5	62	0.4
100	15.5	22	65	56			49.5	53			8	116	132	4.8	18	7	60	101	99	0.9
160	15.5	22	65	56			49.5	53			8	178	196	6	18	7	60	161	159	1.40

Design of connection per DIN

Dimensions in mm

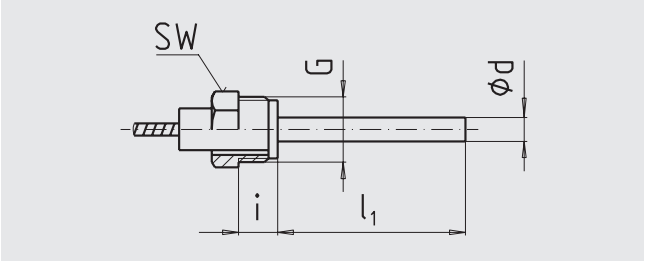
l_F = Capillary length

Design 1, plain connection (without thread)
Stem length in mm: l = 140, 200, 240, 290
(Basis for design 4, compression fitting)



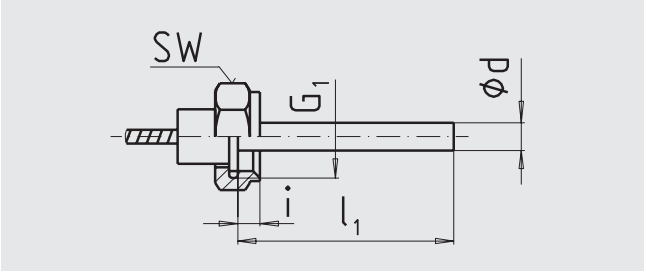
Design 2, male nut
Process connection: G ½ B
Stem length in mm: l_1 = 80, 140, 180, 230

Process connection G	Dimensions in mm SW	i
G ½ B	27	20



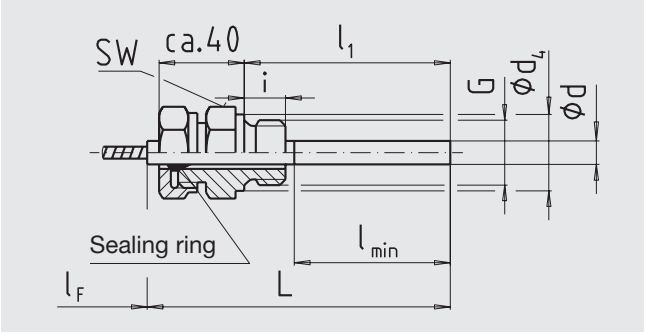
Design 3, union nut
Process connection: G ½, G ¾, M24 x 1.5
Stem length in mm: l_1 = 89, 126, 186, 226, 276

Process connection G	Dimensions in mm SW	i
G ½	27	8.5
G ¾	32	10.5
M24 x 1.5	32	13.5



Design 4, compression fitting (sliding on stem)
Process connection: G ½ B, G ¾ B, M18 x 1.5 as well as ½ NPT, ¾ NPT
Stem length in mm: l_1 = 100, 160, 200, 250
(the stem length used can be reduced to a minimum immersion length of l_{min} = 60 mm)

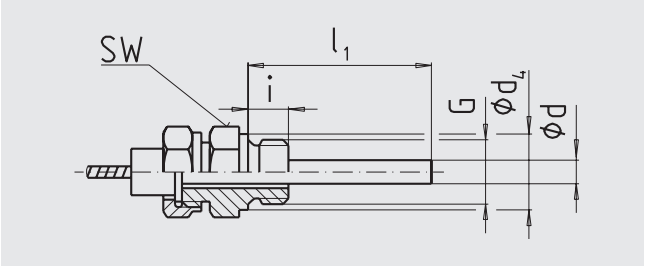
Process connection G	Dimensions in mm SW	d_4	i
G ½ B	27	26	14
G ¾ B	32	32	16
M18 x 1.5	24	23	12
½ NPT	22	-	19
¾ NPT	30	-	20



Design 5, union nut with fitting
Union nut: G ½
Process connection: G ½ B, G ¾ B or ½ NPT, ¾ NPT

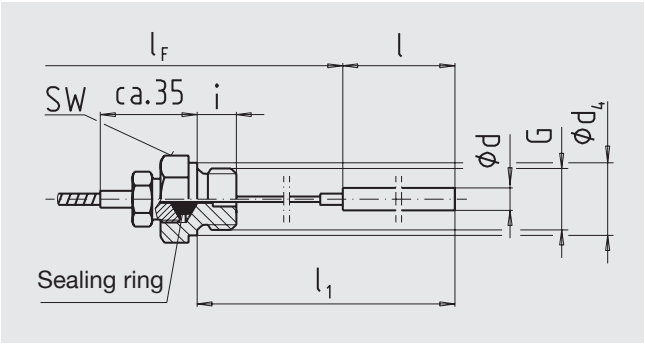
Option:
Union nut: M24 x 1.5
Process connection: M18 x 1.5
Stem length in mm: l_1 = 63, 100, 160, 200, 250

Process connection G	Dimensions in mm SW	d_4	i
G ½ B	27	26	14
G ¾ B	32	32	16
M18 x 1,5	24	23	12
½ NPT	22	-	19
¾ NPT	30	-	20



Design 6, compression fitting (sliding on capillary)
Process connection: G ½ B, G ¾ B or ½ NPT, ¾ NPT
Stem length in mm: l = 100, 140, 200, 240, 290

Process connection G	Dimensions in mm SW	d_4	i
G ½ B	27	26	14
G ¾ B	32	32	16
½ NPT	22	-	19
¾ NPT	30	-	20



Ordering information

Model / Nominal size / Mounting flange / Design of connection / Scale range / Process connection / Stem-ø and -length / Capillary design and length / Options

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

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