

Expansion Thermometers with Micro Switch Stainless Steel Version with Capillary Model 70

WIKA Data Sheet TV 28.01

Applications

- Universally applicable for gaseous, liquid and highly viscous media
- Refrigeration industry
- Mechanical engineering
- Food industry
- Transformers

Special Features

- Case, capillary and stem Stainless Steel
- Design according to DIN EN 13 190
- High switching reliability and contact rating
- Temperature controller and indicator in one instrument
- One or two adjustable micro switches



**Expansion Thermometer with Micro Switch
Model M70.55.100**

Description

Nominal size in mm
100

Measuring principle
Bourdon tube system

Fill medium
Xylol, silicon oil or syltherm

Accuracy class
Class 2

Nominal use
DIN EN 13 190

Ingress protection
IP 44 per EN 60 529 / IEC 529

Capillary entry
Radial

Case
Stainless steel

Bezel
Cam ring (bayonet type) bezel, stainless steel

Connection
Plain, stainless steel 1.4571

Capillary
Length of customer specifications (max. 10 m); Ø 2 mm, stainless steel 1.4571, bending radius no less than 6 mm

Stem
Ø 8 mm, stainless steel 1.4571

Active sensor length

Depends on Ød and scale range

Dial

Aluminium, white, black lettering

Pointer

Aluminium, black

Window

Laminated safety glass (adjustable switch)

Instrument glass (fixed switch)

Mounting provisions

- Surface mounting flange (H), stainless steel
- Surface mounting bracket made of die cast aluminium (M)
- Panel mounting flange (V), stainless steel

Electrical Contacts

Contact typ	Contact functions	
Micro switch	1 x SPDT	2 x SPDT
Typ	850.3	850.3.3

	Voltage AC	Voltage DC
Load data		
U max.	250 V	30 V
I max.	5 A	0.4 A
P max.	250 VA	10 W
Switching point adjustment	from the outside adjustable, fixed change	
Setting range	10 % to 90 % full scale value	
Standard differential gap	< 2 % off scale range, other differential gap on request	
Electrical connection	L-plug	

Type of contact

Description
1 fixed change over switch
2 fixed change over switches
1 adjustable change over switch
2 adjustable change over switches
2 together adjustable over switches
1 adjustable and 1 fixed change over switch

Models

Model	Capillary entry	Mounting provisions
H70.55.100	bottom	Surface mounting flange
M70.55.100	bottom	Surface mounting bracket
V70.55.100	back	Panel mounting flange

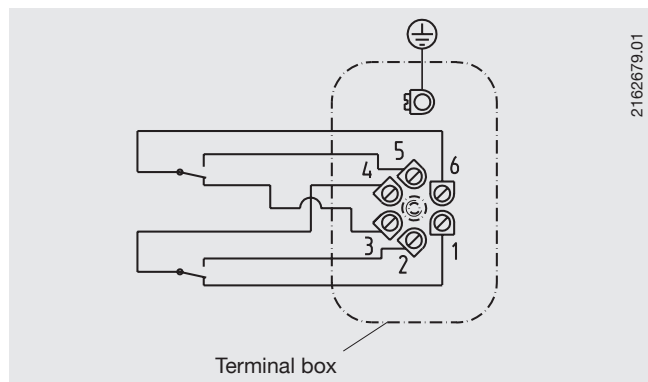
Scale ranges, measuring ranges ¹⁾

Scale range in °C	Measuring range in °C	Error limit ± °C	Scale spacing 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 measuring ranges on request

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

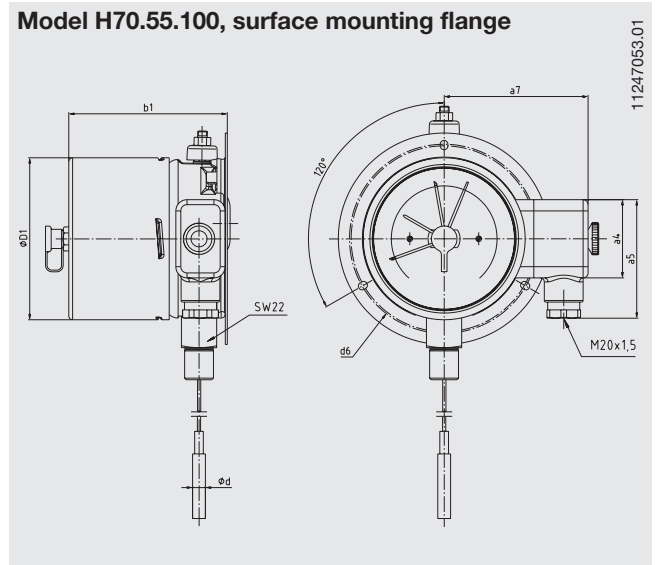
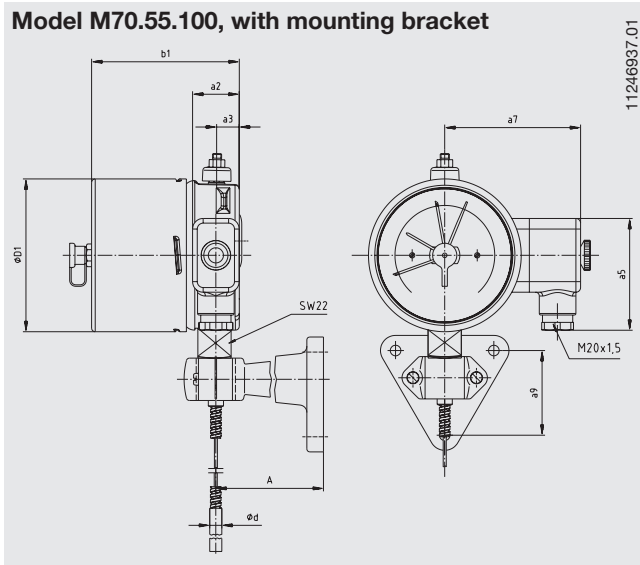
Electrical connection details



Options

- Scale range °F, °C/°F (dual scale)
- Accuracy class 1.0
- Thermowell per DIN or customer specification
- Surface mounting bracket made of other material or in other length (A)
- Other connections
- Designs per DIN EN ISO 13 485, medical applications on request

Dimensions in mm



NS	Dimensions in mm																Weight in kg
	a	a ₁	a ₂	a ₃	a ₄	a ₅	a ₇	a ₈	a ₉	b ₁	Ød	d ₄	d ₅	d ₆	A	ØD ₁	
100	15.5	14.5	31	14.5	49	74	94	65	56	98	8	16	7	120	60	101	1.4

Design of connection per DIN

Design 1, plain stem (without thread)

Stem length in mm: $l = 140, 200, 240, 290$
(Basic 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	Dimensions in mm	
G	SW	i
G ½ B	27	20

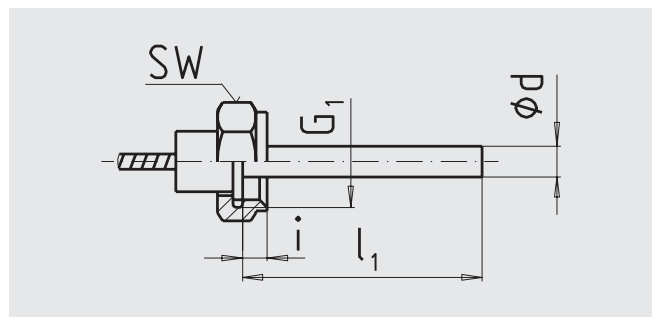
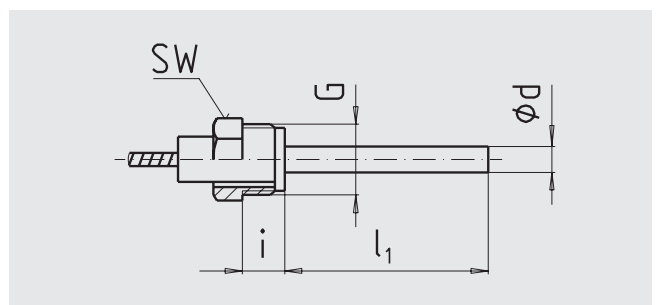
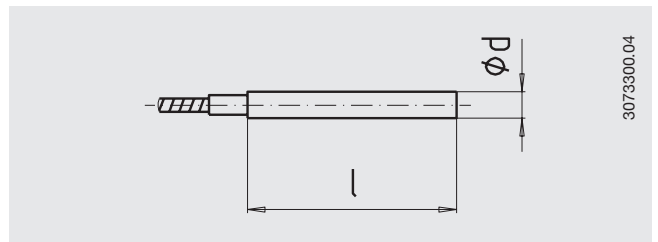
Design 3, union nut

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

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

Dimensions in mm

l_F = Capillary length



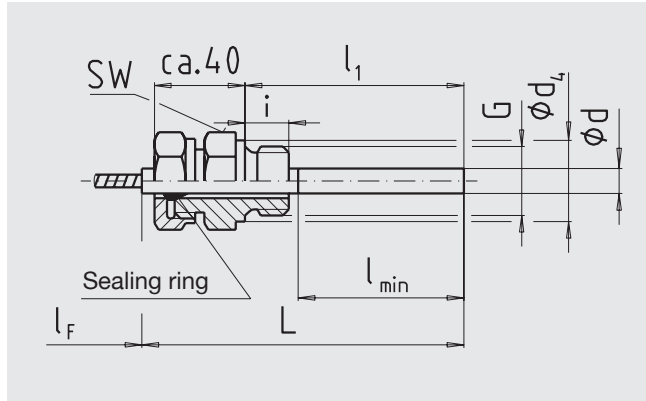
Design 4, compression fitting (sliding on stem)

Process connection: G 1/2 B, G 3/4 B, M18 x 1.5 or 1/2 NPT, 3/4 NPT

Stem length in mm: $l_1 = 100, 160, 200, 250$

(used stem length can be reduced to minimum immersion depth $l_{min} = 60$ mm)

Process connection	Dimensions in mm		
	SW	d_4	i
G 1/2 B	27	26	14
G 3/4 B	32	32	16
M18 x 1.5	24	23	12
1/2 NPT	22	-	19
3/4 NPT	30	-	20



Design 5, union nut with fitting

Union nut: G 1/2

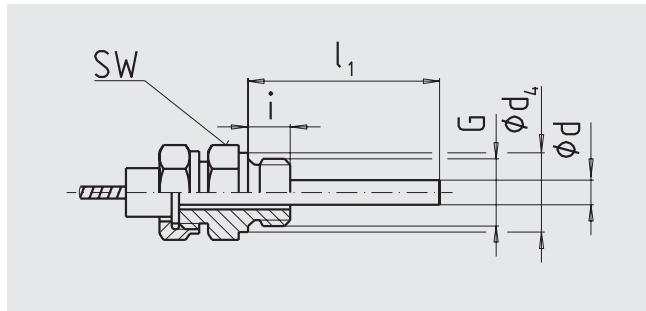
Process connection: G 1/2 B, G 3/4 B or 1/2 NPT, 3/4 NPT

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	Dimensions in mm		
	SW	d_4	i
G 1/2 B	27	26	14
G 3/4 B	32	32	16
M18 x 1.5	24	23	12
1/2 NPT	22	-	19
3/4 NPT	30	-	20

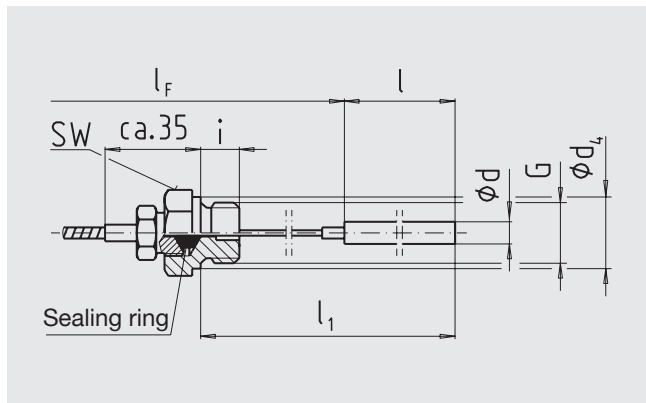


Design 6, compression fitting (sliding on capillary)

Process connection: G 1/2 B, G 3/4 B or 1/2 NPT, 3/4 NPT

Stem length in mm: $l = 100, 140, 200, 240, 290$

Process connection	Dimensions in mm		
	SW	d_4	i
G 1/2 B	27	26	14
G 3/4 B	32	32	16
1/2 NPT	22	-	19
3/4 NPT	30	-	20



Ordering information

Model / Nominal size / Mounting provisions / Design of connection / Scale range / Process connection / Stem diameter and length l, l_1 / Capillary length l_F / 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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