

# Expansion thermometer with micro switch

## Stainless steel version with capillary

### Model 70

WIKA data sheet TV 28.01

#### Applications

- General purpose instrument for gaseous, liquid and highly-viscous media.
- Refrigeration technology
- Machine building
- Transformers
- Food industry

#### Special features

- Case and stem from stainless steel
- Version per DIN EN 13190
- High switching reliability and long service life
- Temperature controller and indicator in a single instrument
- One or two adjustable micro switches



#### Description

**Nominal size in mm**  
100

**Measuring principle**  
Bourdon tube system

**Filling medium**  
Xylol, Silicone oil or Syltherm

**Indication accuracy**  
Class 2

**Rated operating ranges and conditions**  
DIN EN 13190

**Ingress protection**  
IP 44 per EN 60529 / IEC 529

**Capillary entry**  
Lower mount or back mount

**Expansion thermometer with micro switch**  
**model M70.55.100**

**Case**  
Stainless steel

**Bezel ring**  
Cam ring (bayonet type), stainless steel

**Connection**  
Plain, stainless steel 1.4571

**Capillary**  
Length in accordance with 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 contact)

Instrument glass (fixed contact)

## Mounting options

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

## Types of contact

- 1 fixed changeover switch
- 2 fixed changeover switches
- 1 adjustable changeover switch
- 2 adjustable changeover switches

## Models

Model	Capillary entry	Mounting option
H70.55.100	lower mount	Surface mounting flange
M70.55.100	lower mount	Surface mounting bracket
V70.55.100	back mount	Panel mounting flange

## Options

- Scale range °F, °C/°F (dual scale)
- Accuracy class 1.0
- Thermowell to DIN or customer specification
- Surface mounting bracket from other material or another length (A)
- Other connection threads
- Designs per DIN EN ISO 13485, medical applications on request

## Scale and measuring ranges

Scale range in °C	Measuring range <sup>1)</sup> 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

<sup>1)</sup> The measuring range is indicated on the dial by two triangular marks. Only within this range is the stated error limit valid per DIN EN 13190.

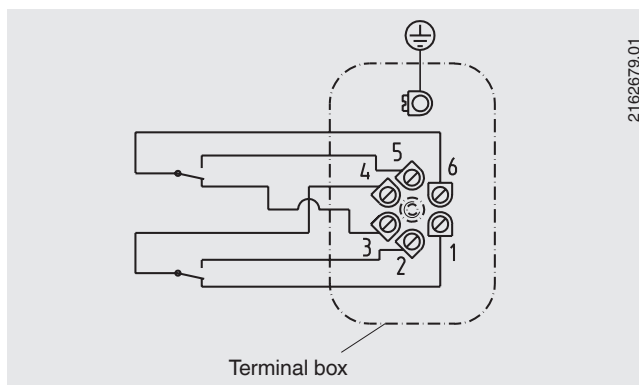
Other scale ranges on request

## Electrical contact

Type of contact	Contact functions	
Micro switch	Single changeover contact (SPDT)	Double changeover contact (DPDT)
Model	850.3	850.3.3

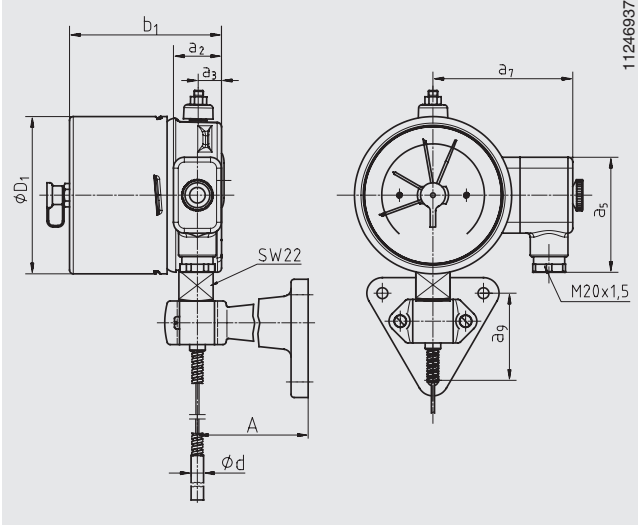
	Voltage AC	Voltage DC
<b>Load data</b>		
U <sub>max</sub>	250 V	30 V
I <sub>max</sub>	5 A	0.4 A
P <sub>max</sub>	250 VA	10 W
Switch point adjustment	adjustable from outside with setting key or fixed	
Setting range	from 10 % to 90 % of the full scale value	
Standard switch differential	< 2 % of scale range, other switch differentials on request	
Electrical connection	via cable terminal box	

## Electrical connection diagram

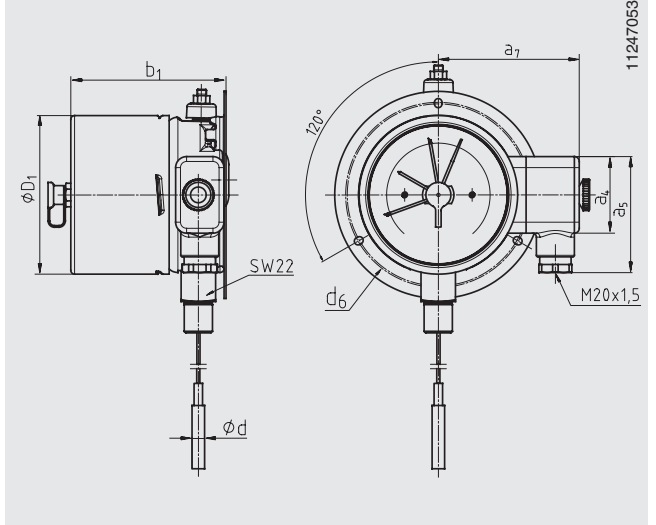


## Dimensions in mm

Model M70.55.100, with surface mounting bracket



Model H70.55.100, surface mounting flange



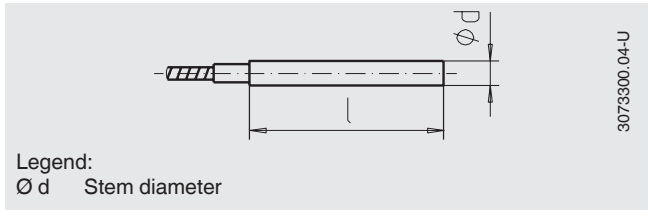
NS	Dimensions in mm																Weight in kg
	a	a <sub>1</sub>	a <sub>2</sub>	a <sub>3</sub>	a <sub>4</sub>	a <sub>5</sub>	a <sub>7</sub>	a <sub>8</sub>	a <sub>9</sub>	b <sub>1</sub>	Ød	d <sub>4</sub>	d <sub>5</sub>	d <sub>6</sub>	A	ØD <sub>1</sub>	
100	15.5	14.5	31	14.5	49	74	94	65	56	98	8	16	7	120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

## Connection design per DIN

### Design 1, plain stem (without thread)

Stem length  $l = 140, 200, 240, 290$  mm

(Basis for design of connection 4, compression fittings)

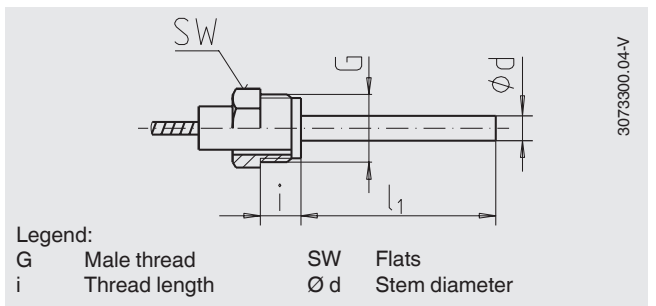


### Design 2, male nut

Process connection: G ½ B

Stem length  $l_1 = 80, 140, 180, 230$  mm

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

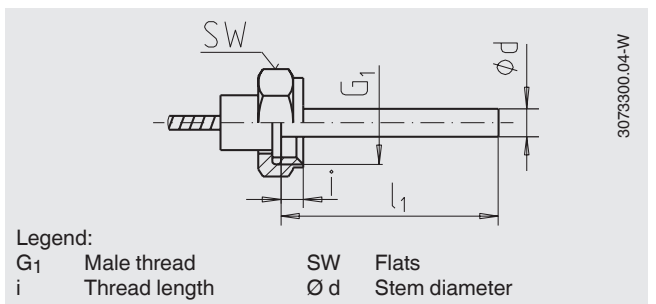


### Design 3, union nut

Process connection: G ½, G ¾, M24 x 1.5

Stem length  $l_1 = 89, 126, 186, 226, 276$  mm

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



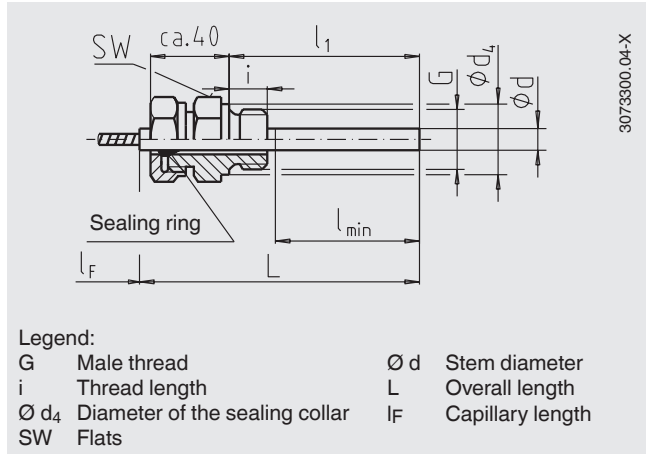
### Design 4, compression fitting (sliding on stem)

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

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

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

Process connection	Dimensions in mm		
G	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 (female): G 1/2

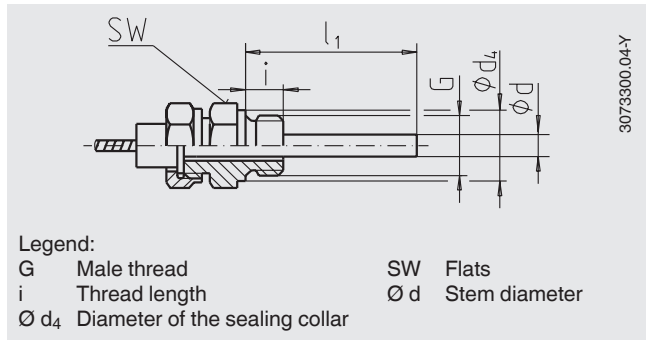
Process connection: G 1/2 B, G 3/4 B and 1/2 NPT, 3/4 NPT

Union nut (female): M24 x 1.5

Process connection: M18 x 1.5

Stem length  $l_1 = 63, 100, 160, 200, 250$  mm

Process connection	Dimensions in mm		
G	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

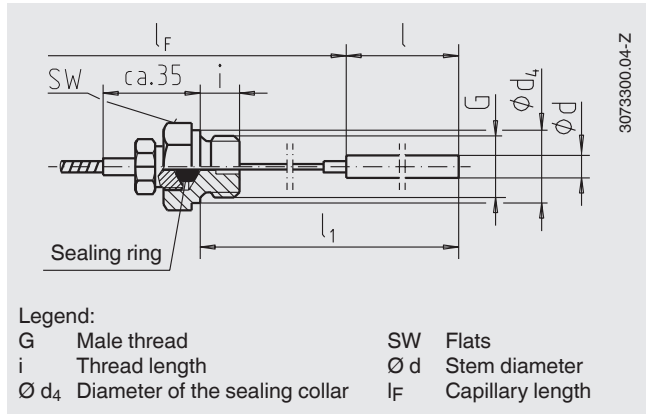


### Design 6, compression fitting (sliding on capillary)

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

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

Process connection	Dimensions in mm		
G	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 option / Connection design / Scale range / Type of contact / Switching points / Process connection / Stem diameter and length / Capillary design and length / Options

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**WIKAI Alexander Wiegand SE & Co. KG**  
Alexander-Wiegand-Straße 30  
63911 Klingenberg/Germany  
Tel. (+49) 9372/132-0  
Fax (+49) 9372/132-406  
E-mail info@wika.de  
www.wika.de