Expansion thermometer with microswitch
Stainless steel version
Model 70-8xx

for further approvals,
see page 4

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 EN 13190
- High switching reliability and long service life
- Temperature limiter and indicator in a single instrument
- One or two adjustable microswitches

Expansion thermometer with microswitch for mounting with instrument mounting bracket

Description

Thermometers of this product range find their application whenever a local temperature display is needed at the same time as switching an electric circuit.

Expansion thermometers can be installed or mounted in almost any location. Versions with capillaries are used in locations which are not easily accessible and where long distances have to be bridged. They can therefore be used universally, e.g. in machine building, refrigeration and air-conditioning applications or other industrial applications.

The case, capillary, stem and process connection are made from stainless steel. To optimise the fitting to the measuring location, different insertion lengths and process connections are available.

Specifications

Basic information		
Nominal size in mm [in]	100 [4]	
Mounting option	■ H70.55.100 surface mounting flange (H), stainless steel ■ M70.55.100 instrument mounting bracket (M), aluminium die-casting ■ V70.55.100 Panel mounting flange (V), stainless steel	
	Other instrument mounting brackets on request	
Design 1	Plain stem (without thread)	
Design 2	Male nut	
Design 3	Union nut	
Design 4	Compression fitting (sliding on stem)	
Design 5	Union nut with loose threaded connection	
Design 6	Compression fitting (sliding on remote capillary)	
	Further connection designs on request	
Fill fluid	■ Xylene ■ Silicone oil ■ Syltherm	
Material (in contact with the environment)		
Case	Stainless steel	
Window	With adjustable contact	Laminated safety glass
	With fixed contact	Instrument glass

Measurement principle	
Type of measurement principle	Bourdon tube system
Remote capillary	
Length	Length in accordance with customer specifications (max. 10 m)
Material (non-wetted)	Stainless steel

Accuracy specifications	
Indication accuracy	Class 2 per EN 13190

Scale range in °C	Measuring range [1] in °C	Error limit ± °C	Scale interval in °C
-60 ... +40	-50 ... +30	2	1
-40 ... +60	-30 ... +50	2	1
-30 ... +50	-20 ... +40	2	1
-20 ... +80	-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 ... 100	4	2
0 ... 160	20 ... 140	4	2
0 ... 200	20 ... 180	4	2
0 ... 250	20 ... 220	5	2

Scale range		
Scale range	-60 ... +250 °C [-76 ... +482 °F]	
Unit (scale range)	■ °C ■ °F ■ °C/°F (dual scale) ■ °F/°C (dual scale)	
Dial		
Scale graduation	■ Single scale ■ Dual scale	
Scale angle	Max. 270 ∢°	
Scale colour	Single scale	Black
	Dual scale	Red
		Other colours on request
Materials	Aluminium, white	
Pointer		
Actual value pointer	Aluminium, black	
Set pointer 1	Aluminium, red	
Set pointer 2	Aluminium, green	

Process connection	
Thread size	■ G ½ B, male thread ■ G ¾ B, male thread ■ G ½, female thread ■ G ¾, female thread ■ M24 x 1.5, male thread ■ M18 x 1.5, male thread ■ ½ NPT, male thread ■ ¾ NPT, male thread
Material	■ Copper alloy ■ Stainless steel
Stem	
Diameter	8, 10 mm; others on request
Material (wetted)	Stainless steel
Insertion length l_1	20 ... 600 mm [0.78 ... 23.62 in]

Output signal	
Type of contact	Microswitch
Contact version	■ 1 fixed change-over contact ■ 2 fixed change-over contacts ■ 1 adjustable change-over contact ■ 2 adjustable change-over contacts
Switch rating	5 A non-inductive at max. 250 V, 50 ... 60 Hz
Power factor	cos φ = 1 (0.6)
Operating principle per EN 60730-1	Type 1.B Integrated RS Temperature limiter
Number of switching cycles per EN 60730-1	10,000 (for UL version 6,000)
Standard switch differential	< 2 % of scale range, other switch differentials on request
Switch point setting	Adjustable from outside with adjustment key or fixed

Electrical connection	
Connection type	Terminal connection with conductor cross-section up to 1.5 mm^2

Operating conditions	
Ambient temperature range	0 ... 50 °C [32 ... 122 °F]
Storage and transport temperature range	-40 ... +60 °C [-40 ... +140 °F]
Ingress protection (IP code) per IEC/EN 60529	IP65 per EN 60529 / IEC 529

Optional approvals

Logo	Description	Country
	PAC Belarus Measurment Instuments (Metrology)	Belarus

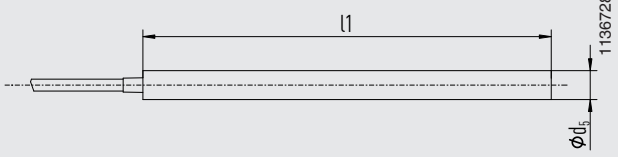
Certificates (option)

Certificates	
Certificates	■ 2.2 test report ■ 3.1 inspection certificate with 3 test points (optionally with 5 test points)

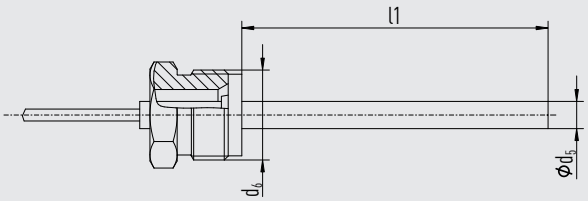
For approvals and certificates, see website

Connection design

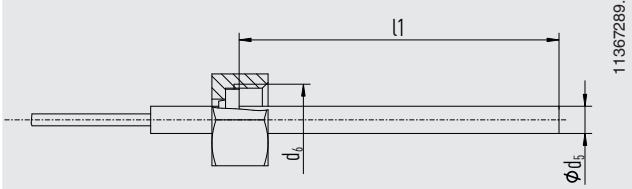
BF1, plain stem (without thread)



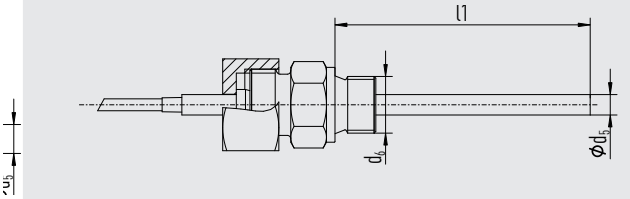
Design 2, swivel connection



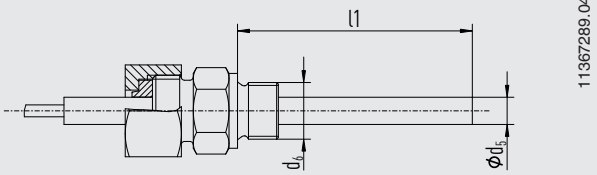
Design 3, union nut



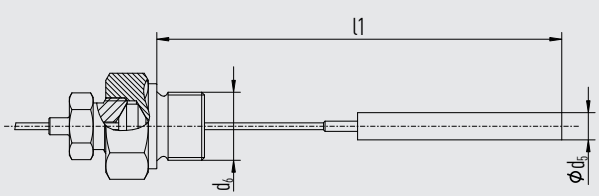
Design 4, compression fitting, sliding on stem



Design 5, rotatable connection with loose threaded connection



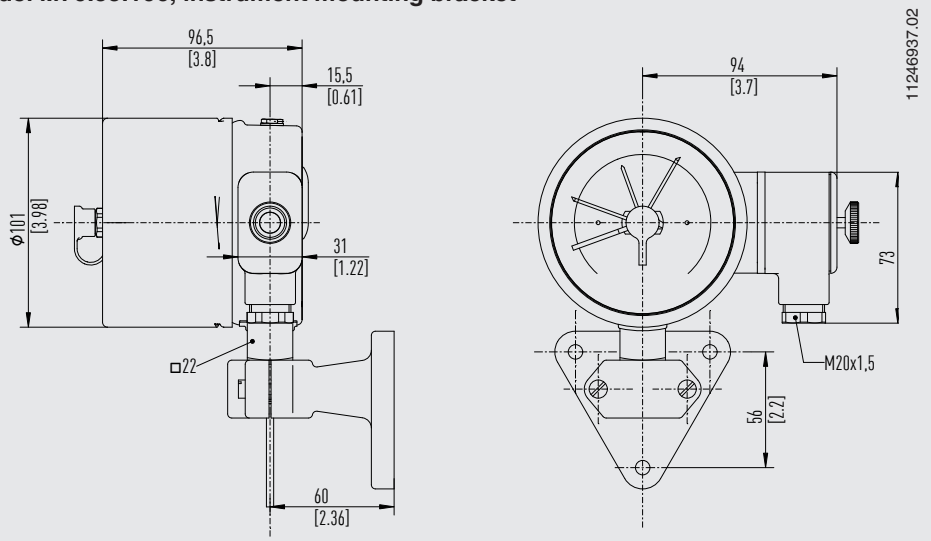
Design 6, rotatable connection with sealing cone



Legend:
$Ød_5$ Stem diameter
$Ød_6$ Threaded process connection
l_1 Variable insertion length

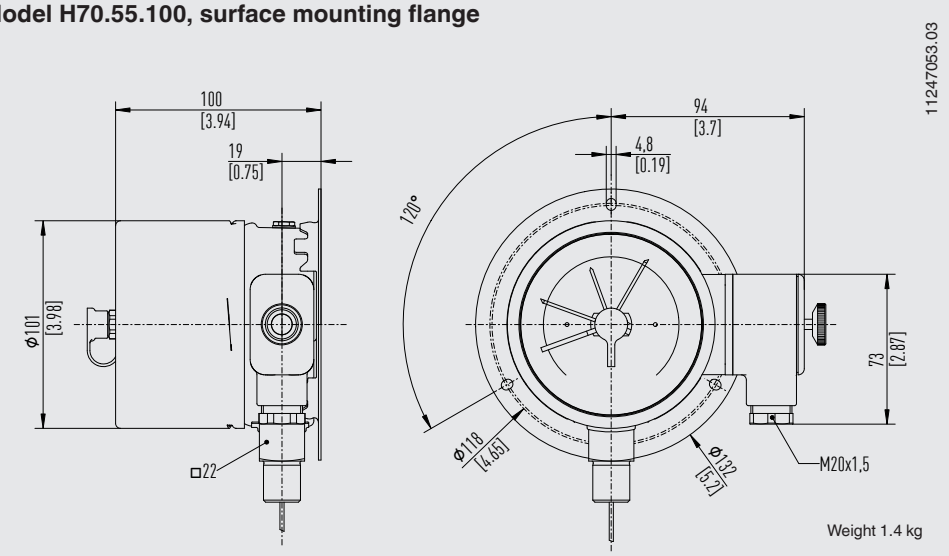
Dimensions in mm [in]

Model M70.55.100, instrument mounting bracket



Weight 1.4 kg

Model H70.55.100, surface mounting flange



Weight 1.4 kg

Ordering information

Model / Nominal size / Mounting option / Connection design / Scale range / Contact version / Switch points / Process connection / Stem diameter / Insertion length / Remote capillary design and length / Options

WIKA Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg/Germany
Tel. +49 9372 132-0
Fax +49 9372 132-406
info@wika.de
www.wika.de