

# Expansion thermometer For industrial applications Model IFC

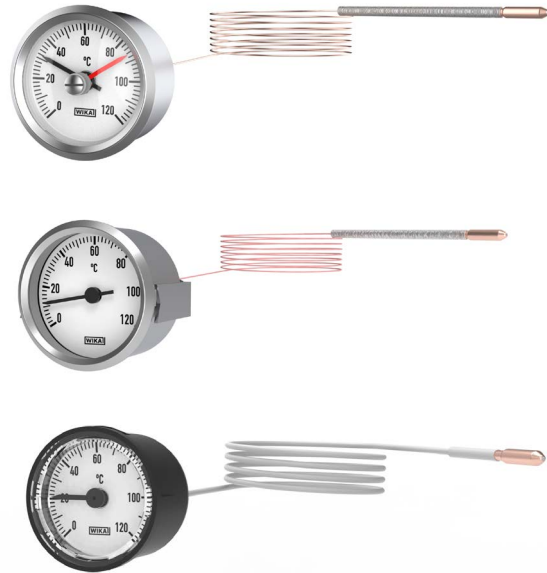
WIKA data sheet TM 80.01

## Applications

- Machine building
- Refrigeration industry
- Food and beverage industry
- Heating, ventilation and air-conditioning

## Special features

- Temperature indication independent from measuring point
- With capillary
- Universally applicable



**Fig. top: IFC size 50 with drag pointer**

**Fig. middle: IFC size 50 with brackets**

**Fig. bottom: IFC size 40 plastic case**

## Description

The thermometer model IFC is an expansion thermometer for universal use in the areas of machine building, refrigeration industry, food and beverage industry as well as heating, air-conditioning and ventilation technology.

The temperature is measured by the extension of a thermometric liquid inside the capillary. Thermometers of this type are used for temperature measurement in locations that are difficult to access and for bridging long distances. The IFC is an inexpensive and a very reliable measuring instrument due to its very simple construction and using a plastic case.

The IFC Expansion Thermometer combines reliability and affordability in a compact design that is both practical and durable. It features a non-electric, thermometric

liquid mechanism within a capillary, making it suitable for hazardous or remote locations where electronic devices may not be feasible. The capillary design enables accurate temperature readings over extended distances, making the IFC model ideal for use in difficult-to-access areas.

It is available in a range of temperature scales to suit diverse applications across multiple industries, from refrigeration and HVAC to food processing and manufacturing. The simple yet effective construction of the IFC Expansion Thermometer enables quick installation, with flexible mounting options for panel, wall, or direct line attachment, allowing seamless integration into existing systems.

## Specifications

Basic information	
Nominal size in mm [in]	<ul style="list-style-type: none"> <li>■ 40 [1.58]</li> <li>■ 52 [2.05]</li> <li>■ 60 [2.36]</li> <li>■ 80 [3.15]</li> <li>■ 100 [3.94]</li> </ul>
Mounting type	<ul style="list-style-type: none"> <li>■ Panel mounting frame</li> <li>■ Panel mounting with clamp</li> </ul>
Fill fluid	<ul style="list-style-type: none"> <li>■ Xylene</li> <li>■ Silicone oil</li> </ul>

Measurement principle	
Illustration of the principle	Bourdon tube system
<b>Remote capillary</b>	
Length	Length in accordance with customer specifications (max. 5 m [16.4 ft])

Indication accuracy			
Accuracy class	Per EN 13190		
Indication accuracy	<table border="1" style="width: 100%;"> <tr> <td>Case</td> <td> <ul style="list-style-type: none"> <li>■ NS 40: <math>\pm 2</math> % of the measuring range at a reference temperature 23 °C</li> <li>■ NS <math>\geq 60</math> in accordance with EN 13190</li> </ul> </td> </tr> </table>	Case	<ul style="list-style-type: none"> <li>■ NS 40: <math>\pm 2</math> % of the measuring range at a reference temperature 23 °C</li> <li>■ NS <math>\geq 60</math> in accordance with EN 13190</li> </ul>
Case	<ul style="list-style-type: none"> <li>■ NS 40: <math>\pm 2</math> % of the measuring range at a reference temperature 23 °C</li> <li>■ NS <math>\geq 60</math> in accordance with EN 13190</li> </ul>		

Measuring ranges		
Measuring range	-100 ... +400 °C [-148 ... +752 °F]	
Unit (scale range)	<ul style="list-style-type: none"> <li>■ °C</li> <li>■ °F</li> <li>■ °C/°F (dual scale)</li> <li>■ °F/°C (dual scale)</li> </ul>	
<b>Dial</b>		
Scale angle	Max. $\sphericalangle$ 270	
Scale graduation	<ul style="list-style-type: none"> <li>■ Single scale</li> <li>■ Dual scale</li> </ul>	
Scale colour	Single scale	Black, white
	Dual scale	Red → Other colours on request

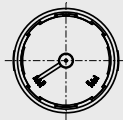
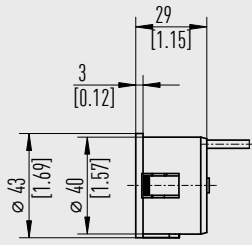
Process connection	
<b>Stem</b>	
Diameter	<ul style="list-style-type: none"> <li>■ 6 mm [0.24 in]</li> <li>■ 8 mm [0.32 in]</li> <li>■ 8.5 mm [0.34 in]</li> </ul>
	→ Others on request

Operating conditions	
<b>Medium temperature range</b>	
Capillary, plastic-covered	-40 ... +120 °C [-40 ... +248 °F]
Capillary, copper alloy	-100 ... +350 °C [-148 ... +662 °F]
<b>Operating temperature</b>	
Case	-20 ... +70 °C [-4 ... +158 °F]
Capillary, plastic-covered	-40 ... +120 °C [-40 ... +248 °F]
Capillary, copper-braided	-100 ... +350 °C [-148 ... +662 °F]
Capillary stainless steel	-100 ... +400 °C [-148 ... +752 °F]
<b>Storage temperature range</b>	-20 ... +60 °C [-4 ... +140 °F]
<b>Insertion length</b>	Variable

Material	
<b>Non-wetted</b>	
Window	<ul style="list-style-type: none"> <li>■ Crystal-clear plastic</li> <li>■ Glass</li> </ul>
Case	<ul style="list-style-type: none"> <li>■ Plastic (ABS), black</li> <li>■ Galvanized steel</li> </ul>
Remote capillary	<ul style="list-style-type: none"> <li>■ Copper, plastic-covered</li> <li>■ Copper-braided</li> <li>■ Double copper-braided</li> <li>■ Stainless steel</li> </ul>
Dial	<ul style="list-style-type: none"> <li>■ Plastic</li> <li>■ Aluminium</li> </ul>
<b>Wetted</b>	
Stem	<ul style="list-style-type: none"> <li>■ Brass</li> <li>■ Stainless steel</li> </ul>
Measuring system	Copper alloy
Capillary	<ul style="list-style-type: none"> <li>■ Copper, plastic-covered</li> <li>■ Copper-braided</li> <li>■ Double copper-braided</li> </ul>

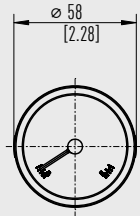
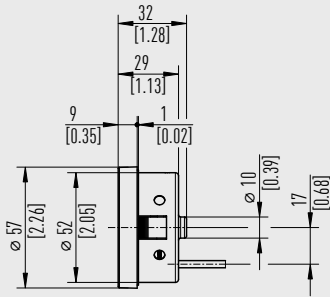
**Dimensions in mm [in]**

**IFC NS 40 plastic case**



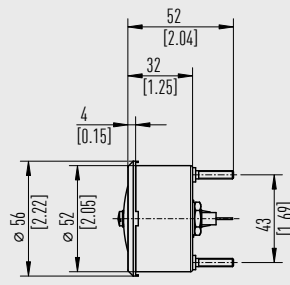
Weight: 68 g

**IFC NS52 plastic case**



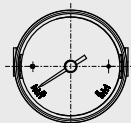
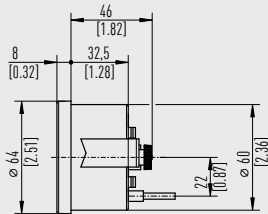
Weight: 78.45 g

**IFC NS52 steel case**



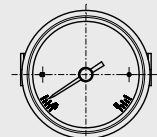
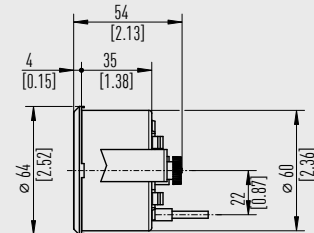
Weight: 144.95 g

**IFC NS60 plastic case**



Weight: 121.20 g

**IFC NS60 steel case**



Weight: 280 g

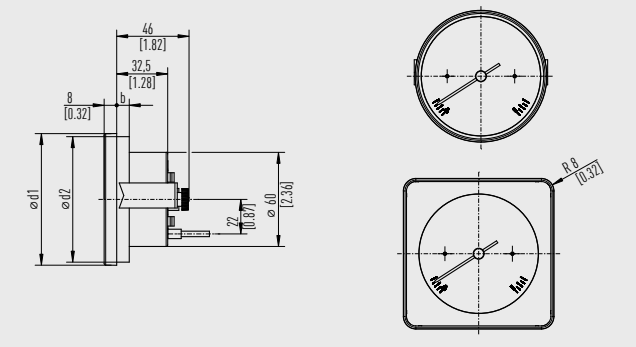
## Legend

$l_1$  Insertion length

$d_6$  Diameter of the stem

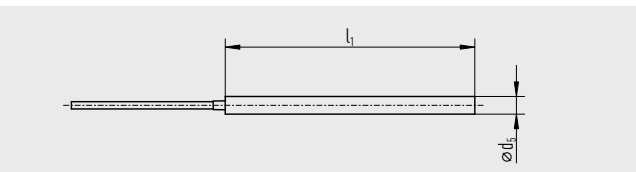
$\varnothing d_5$  Diameter of the stem

### IFC NS80 NS 100 steel case

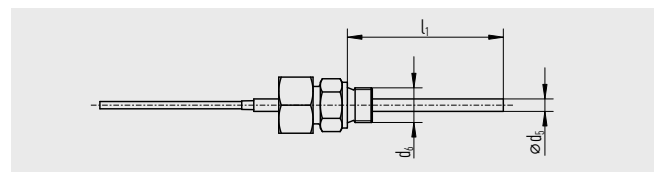


NS	Weight	$d_1$	$d_2$	b
80	211g	$\varnothing 84$ [3.31]	$\varnothing 80$ [3.15]	8 [0.32]
100	317g	$\varnothing 104$ [4.09]	$\varnothing 100$ [3.94]	10 [0.39]

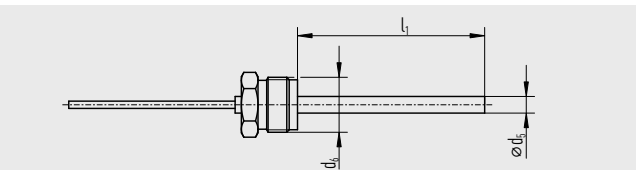
### Plain stem (without thread), BF1



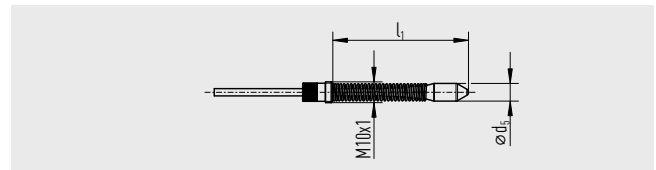
### BF4



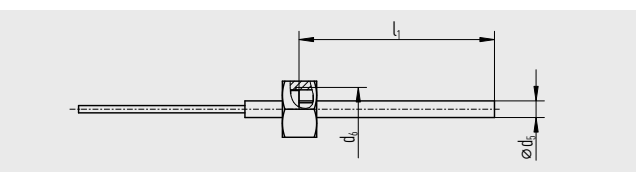
### BF2



### SF95

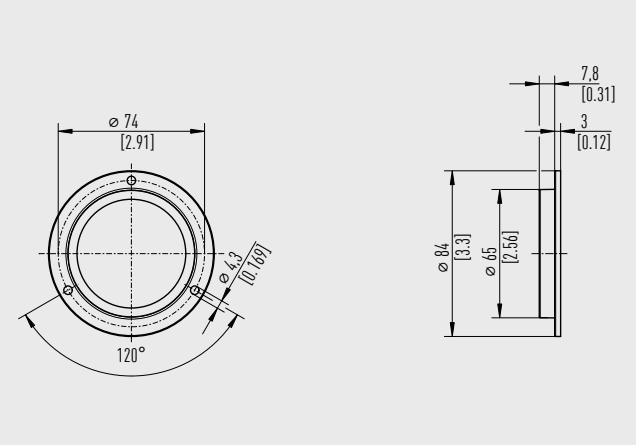


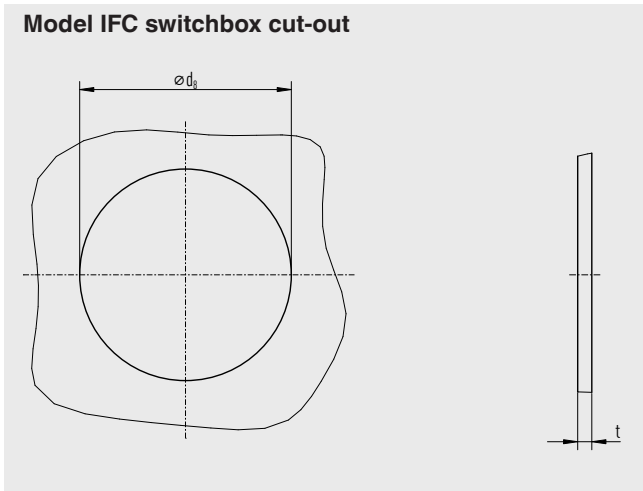
### BF3



→ For further connection designs, see Technical information IN 00.20.

### Bezel, chrome-plated for NS60





NS	$\varnothing d_g$ mm [in]	t mm [in]
IFC $\varnothing$ 40	40.5 <sup>+0,2</sup> [1.59] <sup>+0,007</sup>	0.8 ... 3.5 [0.03 ... 0.14]
IFC $\varnothing$ 52	52.5 <sup>+0,2</sup> [2.07] <sup>+0,007</sup>	
IFC $\varnothing$ 60 IFC 72 x 72	40.5 <sup>+0,2</sup> [1.59] <sup>+0,007</sup>	0.8 ... 3.5 [0.03 ... 0.14]
IFC $\varnothing$ 80 IFC 96 x 96	80.5 <sup>+0,1</sup> [3.17] <sup>+0,003</sup>	
IFC $\varnothing$ 100	100.5 <sup>+0,1</sup> [3.95] <sup>+0,003</sup>	

## Approvals

Logo	Description	Region
-	CRN Safety (e.g. electr. safety, overpressure, ...)	Canada

## Certificates (option)

Certificates	
Certificates	<ul style="list-style-type: none"> <li>■ 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, material proof, indication accuracy)</li> <li>■ 3.1 inspection certificate per EN 10204 (e.g. material proof for wetted metal parts, indication accuracy, calibration certificate)</li> </ul>

→ For approvals and certificates, see website

## 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

To order the described product the order number is sufficient.

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