

Manifold thermocouple

For the plastics machinery industry

Model TC47-MT

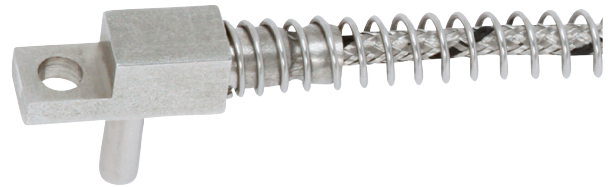
WIKA data sheet TE 67.21

Applications

- Plastics and rubber industry
- Hot runner manifolds for injection mould machines
- Injection moulding tools

Special features

- Application range up to 400 °C [752 °F]
- Thermocouple cable standard with glass-fibre insulation and stainless steel braid
- Thermocouple type J or K in accordance with IEC 60584 or ASTM E230
- The manifold thermocouple is a low profile design
- Interchangeable and easily replaceable



Manifold thermocouple, model TC47-MT

Description

The TC47-MT manifold thermocouple is a general purpose temperature sensor designed to suit all applications where medium to low profile temperature detection is required. The thermocouple is designed to sense temperature where the metal sensor tip is fitted directly into a drilled hole.

The manifold thermocouple is held in place with a screw. This allows the sensor to have positive pressure at the tip when installed correctly. Due to the construction design, these sensors can be applied in areas that have a harsh environment and difficult to reach.

Sensor

Measuring element

As measuring elements, for the model TC47-MT, WIKA uses the following thermocouples:

- 1 x type J (Fe-CuNi)
- 1 x type K (Ni-CrNi)

The accuracy class of the thermocouple corresponds to class 2 of the international standard IEC 60584. On request, the model TC47-MT thermocouples can also be delivered in a standard tolerance in accordance with ASTM E230.

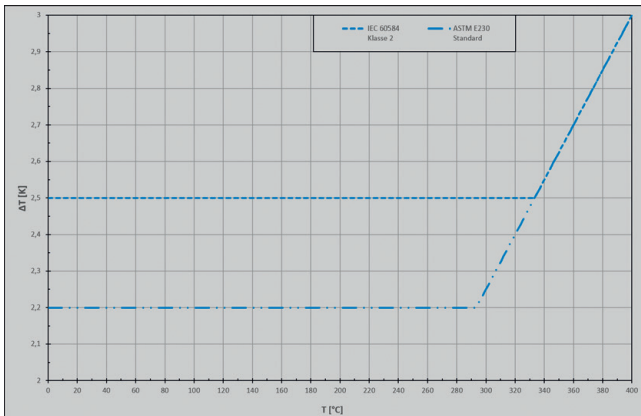
Since the values of the two standards differ only slightly, we recommend that you use thermocouples in accordance with IEC 60584.

For detailed specifications for thermocouples, see IEC 60584-1 or ASTM E230 and Technical information IN 00.23 at www.wika.com.

Tolerance value

For the tolerance value of thermocouples, a cold junction temperature of 0 °C [32 °F] has been taken as the basis.

Comparison IEC 60584 and ASTM E320



Probe tip

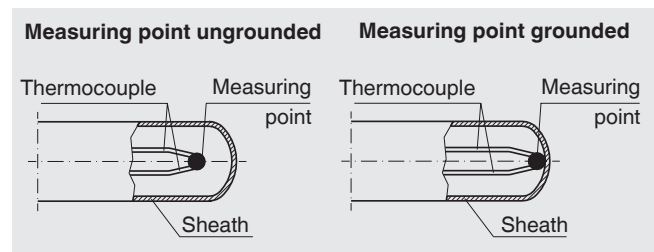
- Design: Rigid block and tube
Material: Stainless steel
Block size: ■ 8 x 8 mm [0.31 x 0.31 in]
 ■ 6 x 6 mm [0.24 x 0.24 in]
Tip diameter: 4 mm [0.16 in]
Tip length: ■ 12 mm [0.47 in]
 ■ 20 mm [0.79 in]
 ■ 25 mm [0.98 in]

Other versions on request

For temperature measurement in a solid body, the diameter of the bore into which the probe is inserted, should be no more than 1 mm [0.04 in] larger than the probe diameter.

Probe tip designs

The model TC47-MT has two different variants:



The thermocouple will be delivered as a single thermocouple with an ungrounded measuring point, unless explicitly specified otherwise.

Thermocouple cable

As an insulation material for the model TC47-MT thermocouple, WIKA uses glass fibre as standard. An additional braid from stainless steel offers an excellent protection for the cable against mechanical damage.

The individual wires correspond to the selected thermocouple. The cross-section is min. 0.22 mm² [24 AWG]

The thermocouple termination end can be supplied ready for connection or fitted with a thermo-connector in a standard or miniature design as an option.

Colour coding of thermocouple cable

Thermocouple	Standard	Positive	Negative
Type J	IEC 60584	Black	White
	ASTM E230	Red	White
	DIN 43714 ¹⁾	Blue	Red
Type K	IEC 60584	Green	White
	ASTM E230	Red	Yellow

1) DIN 43714 is no longer valid. It has been replaced by IEC 60584.

For type J thermocouples, however, WIKA continues to offer the colour coding in accordance with DIN 43714. The thermovoltage characteristic corresponds to type J of the current standard IEC 60584.

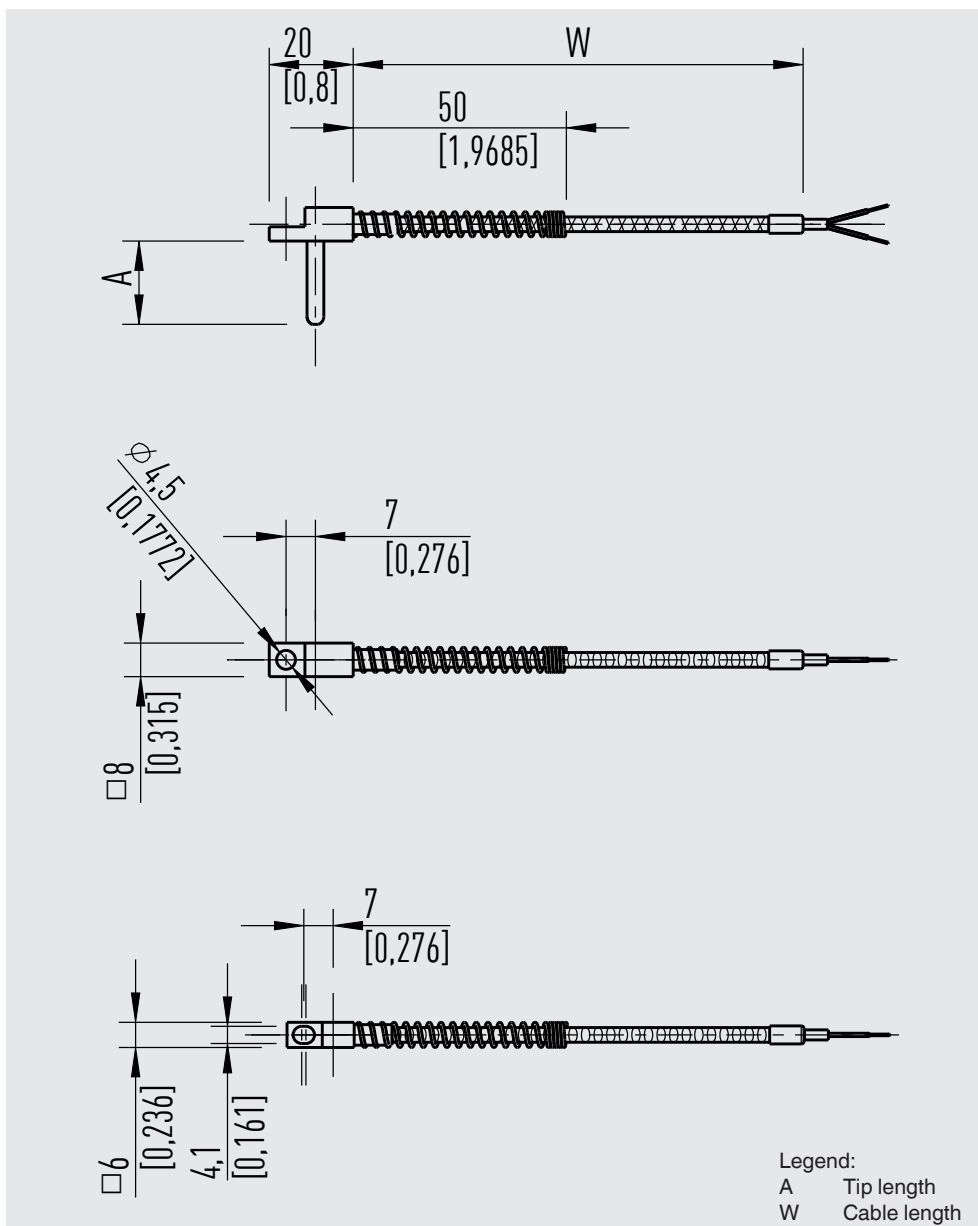
Electrical connection

The model TC47-MT is delivered as standard with bare wire ends.

Optionally, a thermo-connector in standard or miniature design can be fitted.

The maximum permissible temperature at the connector is 85 °C [185 °F].

Dimensions in mm [in]



Ordering information

Model / Measuring element / Probe tip designs / Process connection / Electrical connection / Option

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