

# Miniature multipoint thermocouple

## Model TC96-M

WIKA data sheet TE 70.14

### Applications

- Chemical and petrochemical industry
- Measurement of temperature layerings or hotspots in reactors
- Fuel depots



### Special features

- Flexible installation
- Secondary containment
- Replaceability

Miniature multipoint thermocouple, model TC96-M

### Description

Multipoint thermocouples are often used for measuring temperature profiles in reactors or fuel depots or for the detection of the so-called "hotspots".

Individual measuring points are stuffed or drawn into an outer protection tube. The measuring points are placed at various levels to suit the application. Depending on customer needs, the protection tube is then assembled with a process connection for direct mounting or inside a guide tube. Connection terminals or temperature transmitters are placed in the connection housing which is either a component of the multipoint thermocouple or can be mounted separately, e.g. on a wall or pipeline.

These assemblies are used when a temperature profile is desired and mass, or size, of the sensor is a limitation. They can be constructed in a wide variety of configurations to suit the specific application.

For example, it is possible in some applications to add a traversing ability to the multipoint thermocouple. This allows for continuous data to be collected over the distance of the traverse stroke. This feature can help gather important information relating to catalyst or process activity. These traversing units can be electrically driven with precise feedback on position.

## Specifications

### Materials

- Stainless steel 316L
- Special alloys or carbon steels as protection tube material

### Process connections

- Flanges of all major national and international standards
- Threaded connections with male or female threads to customer specifications

### Sensors

- Miniature thermocouple multipoints
- Single, double sensor
- For details, see data sheet TE 70.12 of the miniature multipoint thermocouple model TC97

### Shipping

- Model TC96-M protection tube:  
In wooden box with lengths of up to 12 metres, steel shipping racks upon request
- Model TC96-M sensor assembly:  
In wooden box, coiled

### Protection tube dimensions

- 3.2 mm (1/8")
- 4.7 mm (3/16")
- 6.4 mm (1/4")
- 7.9 mm (5/16")
- 9.5 mm (3/8")
- 12.7 mm (1/2")
- 19.1 mm (3/4")
- 25.4 mm (1")

### Insertion length U

Freely selectable

### Material

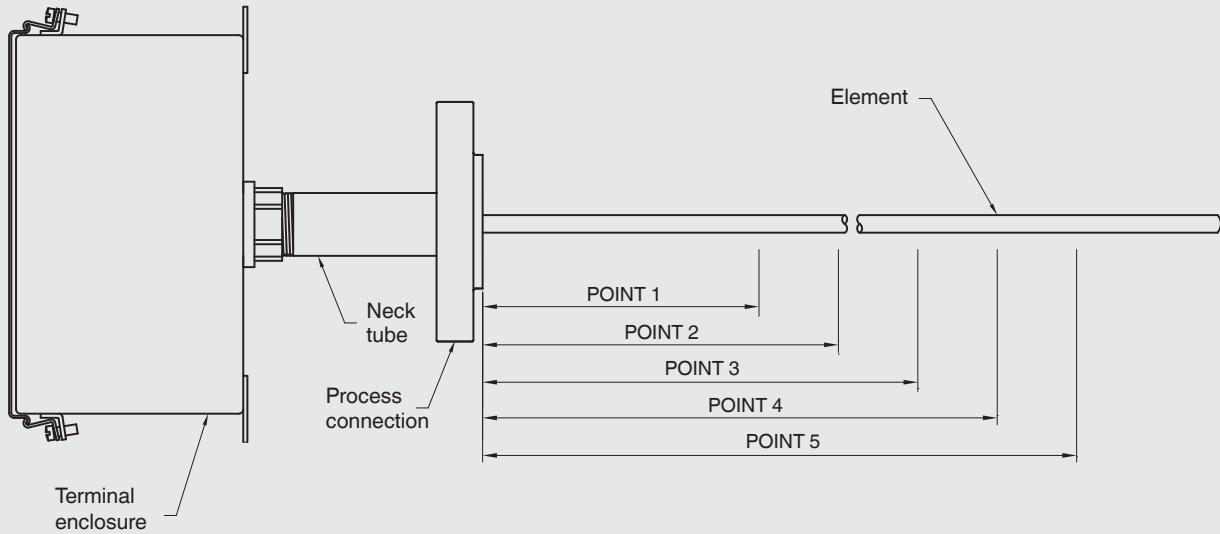
- Stainless steel 316
- Stainless steel 316L

Other materials available

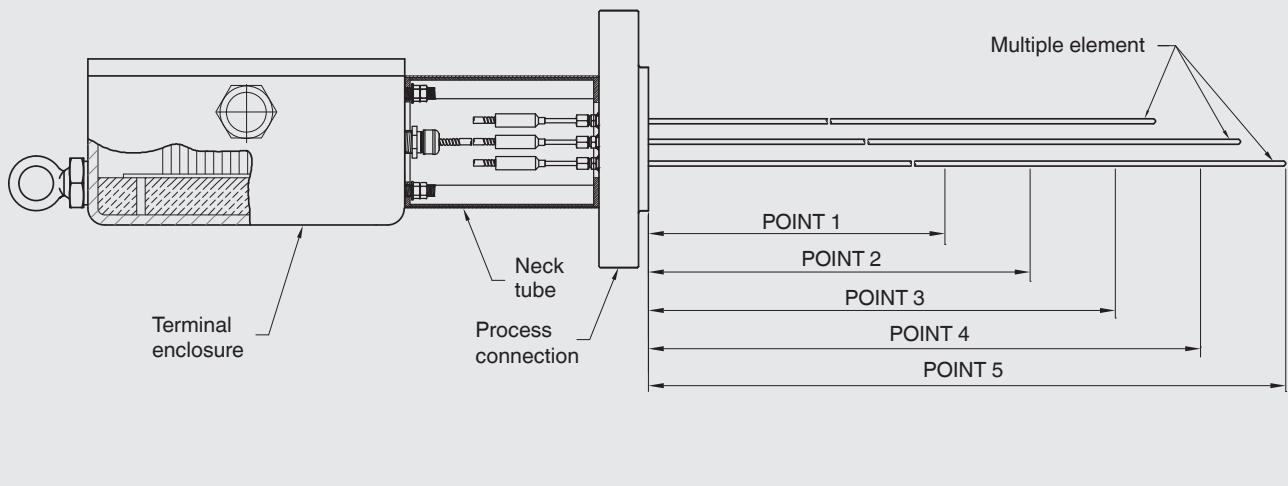
## Base elements of a multipoint thermocouple

A multipoint thermocouple can be basically divided into 5 individual assemblies which are described separately below:

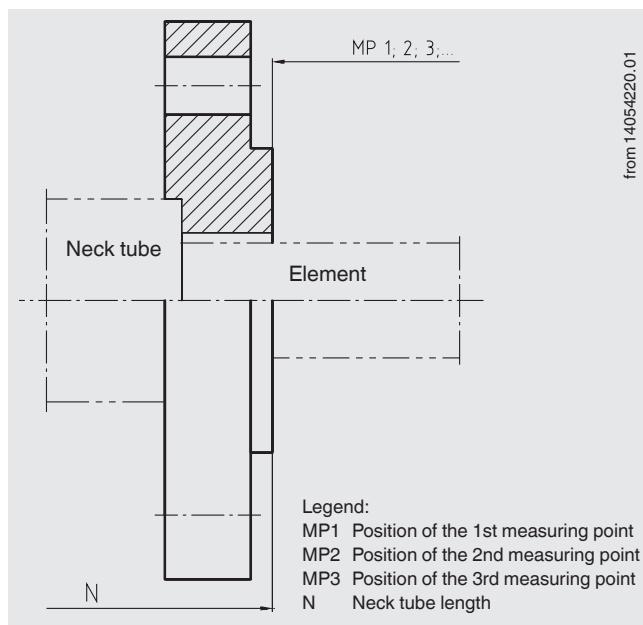
### Single miniature multipoint thermocouple



### Multi miniature multipoint thermocouple



## ■ Process connection



### Flange designs

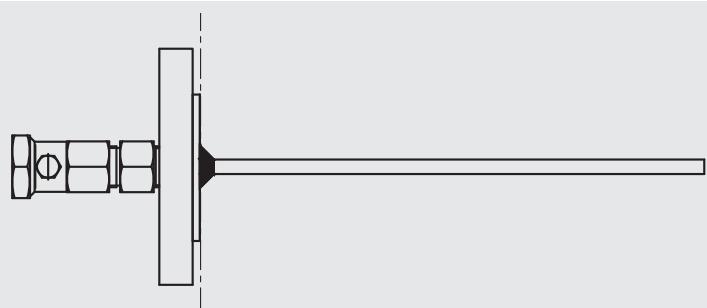
Flanges in accordance with applicable standards, such as ANSI/ASME B16.5, EN 1092-1, DIN 2527 or to customer specification

Standards	Flange design
ASME B16.5	Nominal width: 2 ... 4" Pressure rating: class 150 ... 2,500
EN 1092-1/DIN 2527	Nominal width: DN 50 ... DN 200 Pressure rating: PN 16 ... PN 100

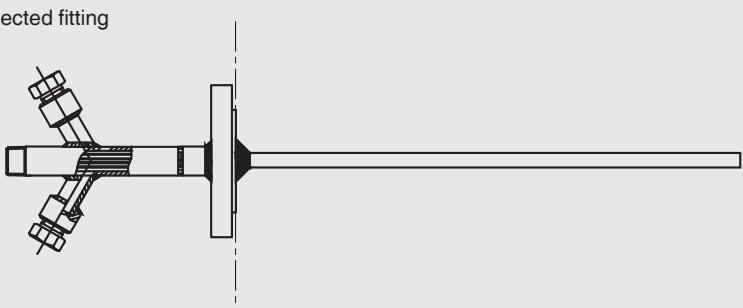
Each multipoint thermocouple model TC96-M is designed and manufactured according to individual customer specifications.

## Process connection options

Instrument fitting



Explosion-protected fitting

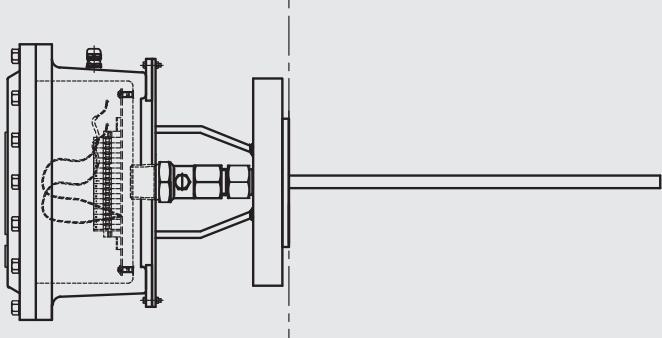


Standard fitting

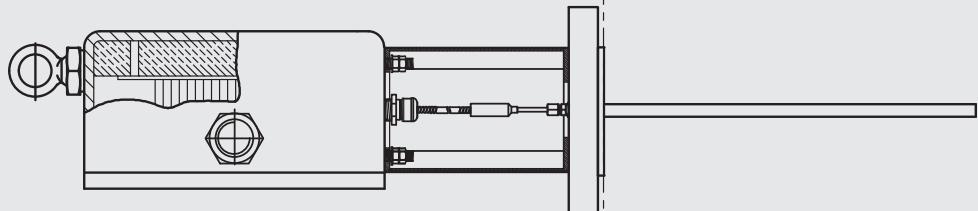


## ■ Neck tube

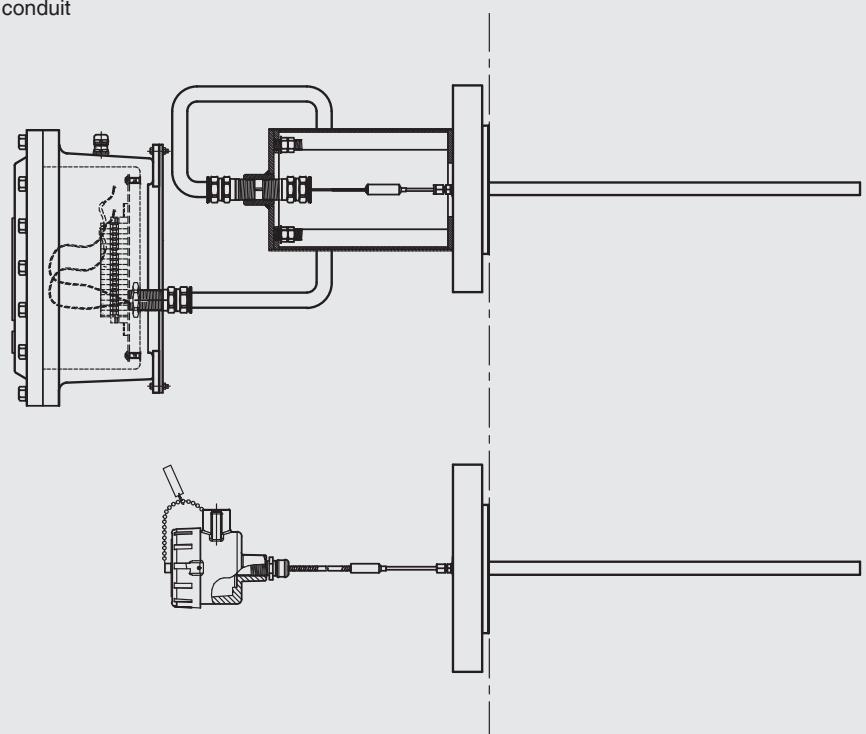
Case, direct attachment



Case, offset attachment with shroud/support



Case, remote attachment with conduit

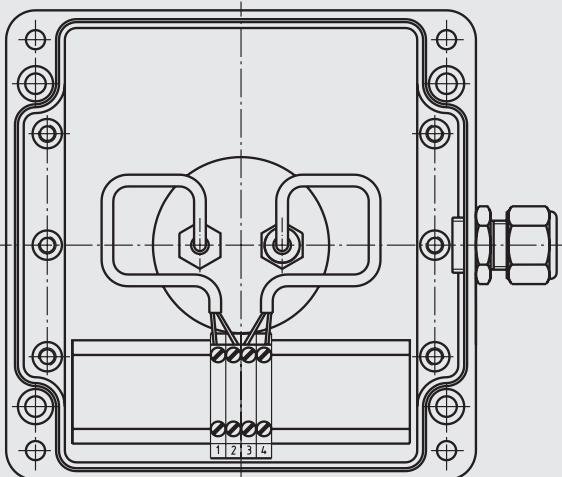


Not all configurations are shown. Consult your WIKA contact person for options.

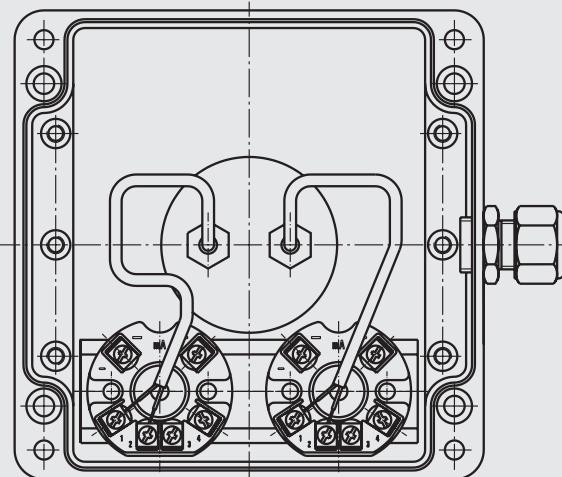
## ■ Terminal enclosure

Cable compression fittings in accordance with customer specification

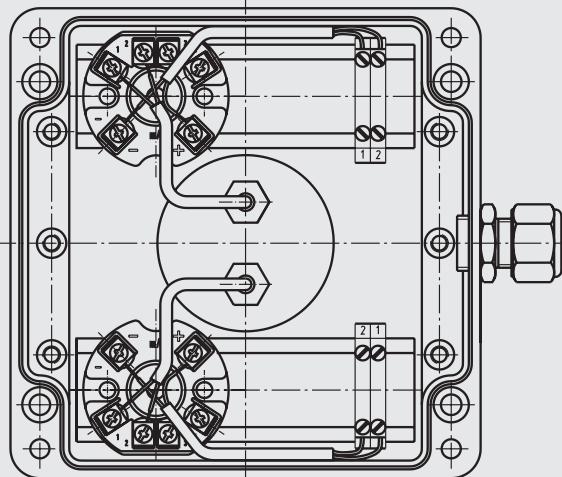
Connection terminals



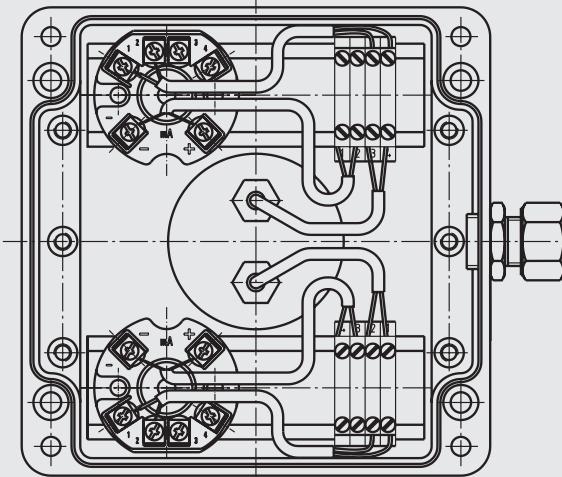
Transmitters



Transmitter on terminal



Terminal on transmitter on terminal

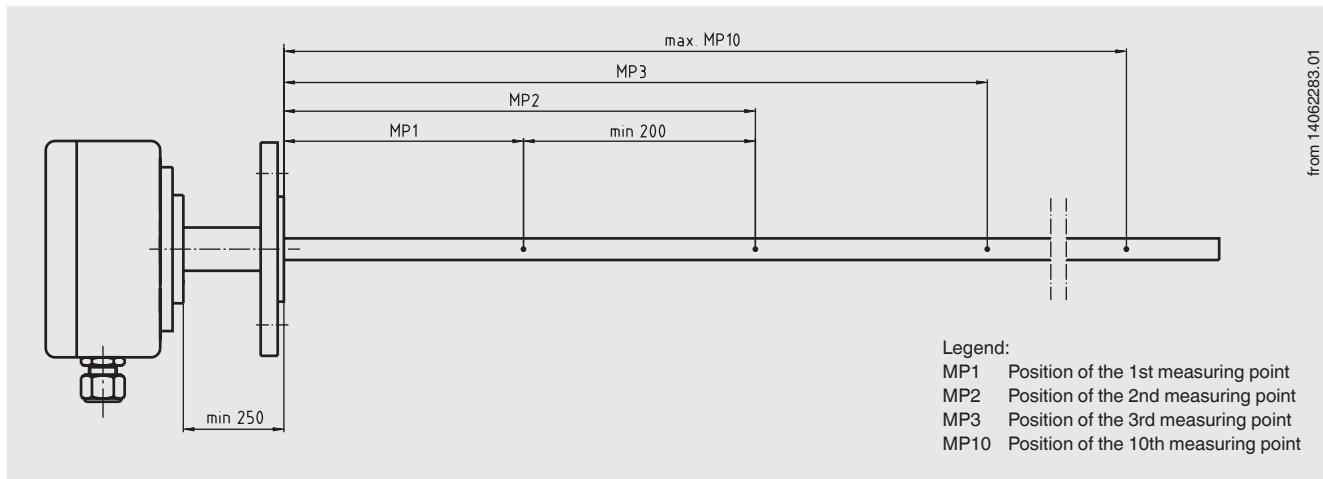


The actual wiring can deviate from this illustration.

Each multipoint thermocouple model TC96-M is designed and manufactured according to individual customer specifications. In multipoint thermocouples with explosion protection, the terminal enclosure dimensions can deviate considerably from the data sheet specifications, depending on design.

## Dimensions in mm

### Position of the measuring points



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