

Flexible multipoint thermometer for pipewells

With/without purge

Models TR96-O, TC96-O

WIKA data sheet TE 70.11

Flex-O™

Applications

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

Special features

- Flexible installation
- Secondary containment
- Replaceability



Flexible multipoint thermometer without pipewell, model Tx96-O

Description

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

To achieve rapid response times, the individual measuring points are pressed by pressure springs to the internal side of the pipewell which forms a single entity with the thermometer or which can ideally be an already existing component of the reactor. Connection terminals or temperature transmitters are placed in the connection housing which is either a component of the multipoint thermometer or can be mounted separately, e.g. on a wall or pipeline.

The Tx96-O is a unique product offering superior reliability, utility and safety. The Flex-O™ design substantially improved the science of reactor temperature measurement. It allows temperature measurement at various levels throughout the reactor with the use of multiple measuring points; and it does so while offering a flexibility feature that makes installation

easier. Additionally, that flexibility ensures that the sensor tip remains in continuous contact with the inner wall of the pipewell, even in the event of pipewell warpage. These characteristics, as well as Flex-O™'s replaceability, speed of response, bimetallic actuation and point density, have made this design a standard used throughout the industry.

The Flex-O™ purge is a unique product feature for increased safety, by purging contaminants and providing internal pipewell pressure relief. The purge design incorporates a single, heavy-wall center support tube which provides a purging gas the entire length of the pipewell. The purging protects the internal of the pipewell and thermocouple sensors.

All Flex-O™ designs are customer engineered for each specific customer application and need.

Specifications

Versions

- Tx96-O-F: without purge
- Tx96-O-P: with purge (option)

Materials

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

Process connections

- Flanges of all major national and international standards
- Threaded connections with male or female threads to customer specifications
- Secondary containment/seal
- Seal clamp connector

Sensors TR96-O

- Pt100 class A or B as sheathed cable installation
- Single, double sensor
- For details, see data sheet TE 60.40 of the cable resistance thermometer model TR40

Sensors TC96-O

- Thermocouples as sheathed cable installation
- Single, double element
- Measuring point ungrounded or grounded
- For details, see data sheet TE 65.40 of the cable thermocouple model TC40

Shipping

- Model Tx96-O pipewell:
In wooden box with lengths of up to 12 metres, steel shipping racks upon request
- Model Tx96-O sensor assembly:
In wooden box, coiled

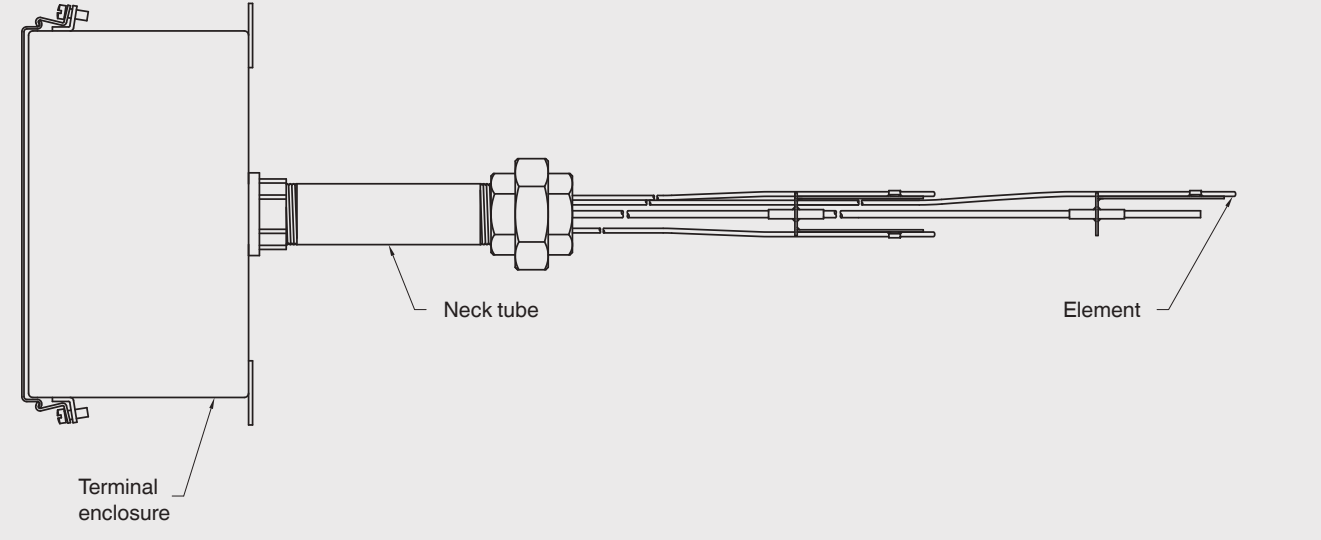
Purge (option)

Version Tx96-O-P is supplied with a purge connection. Connection and supply requirements are designed according to individual customer specifications.

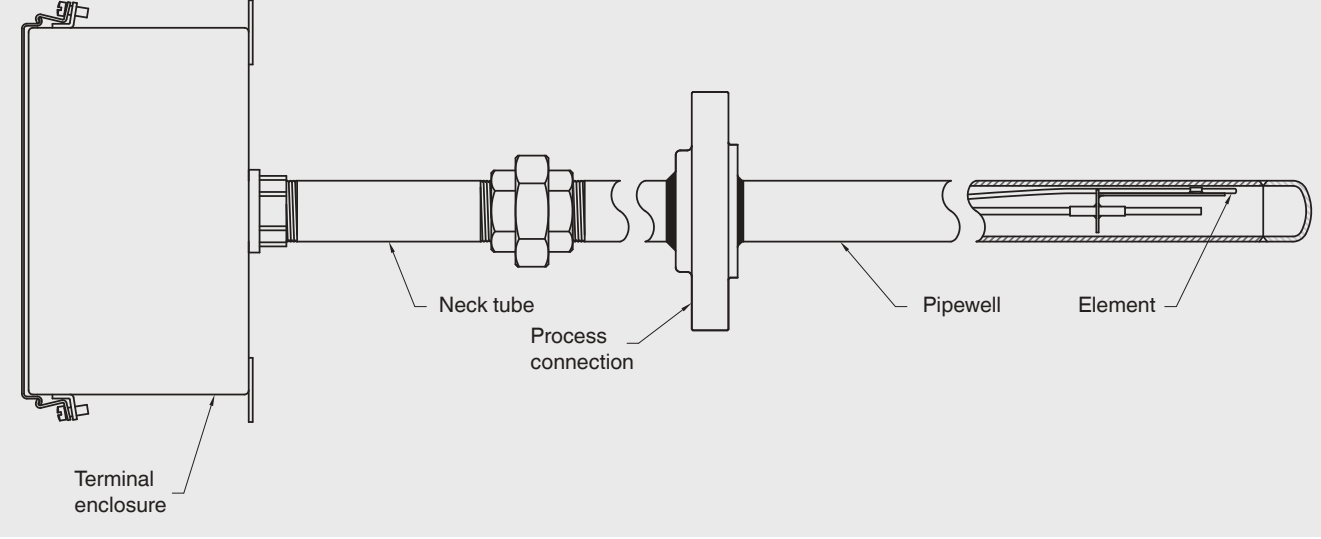
Base elements of a multipoint thermometer

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

Multipoint thermometer without pipewell

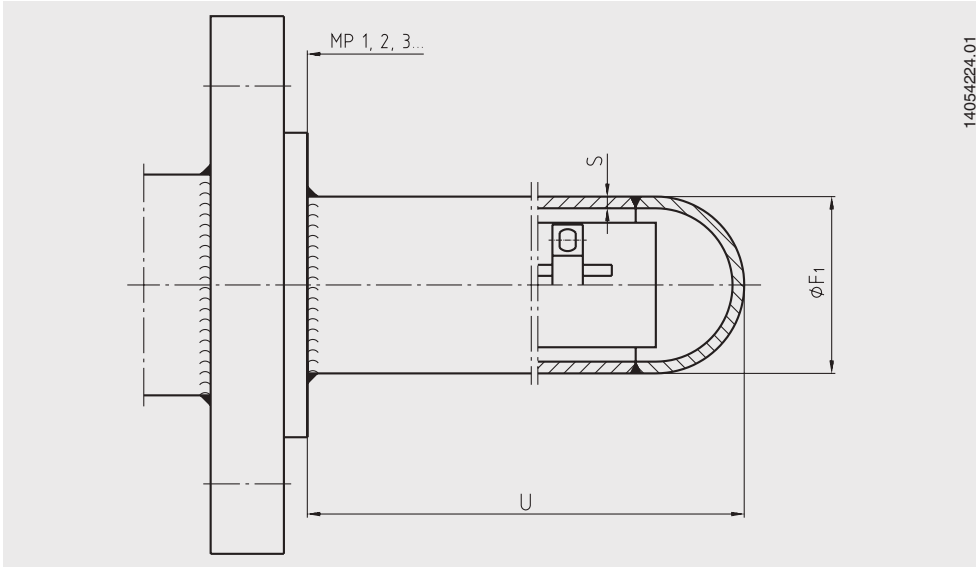


Multipoint thermometer with pipewell



Dimensions in mm

■ Pipewell (option)



Pipe dimensions ϕF_1

- 1 1/4 NPS
 - 1 1/2 NPS
 - 2 NPS
 - 3 NPS
- Other sizes available

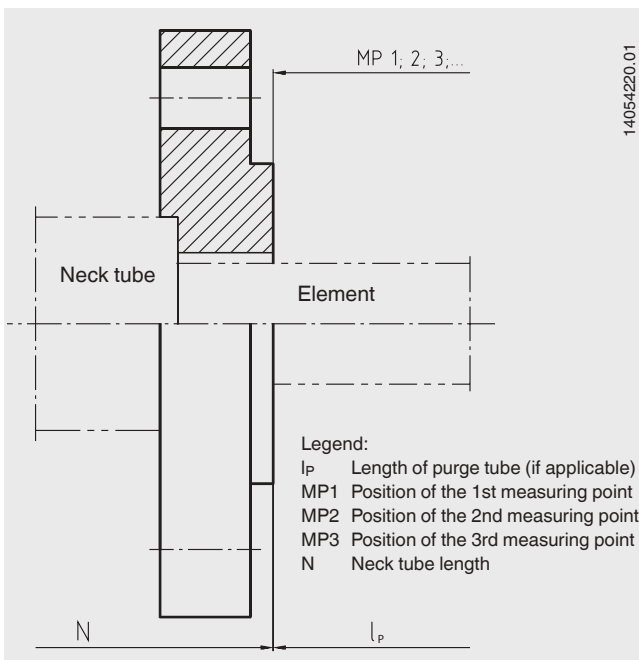
Insertion length U

Freely selectable (max. 40 m)

Material

- Stainless steel 316
 - Stainless steel 316L
- Other materials available

■ Process connection



Flange designs

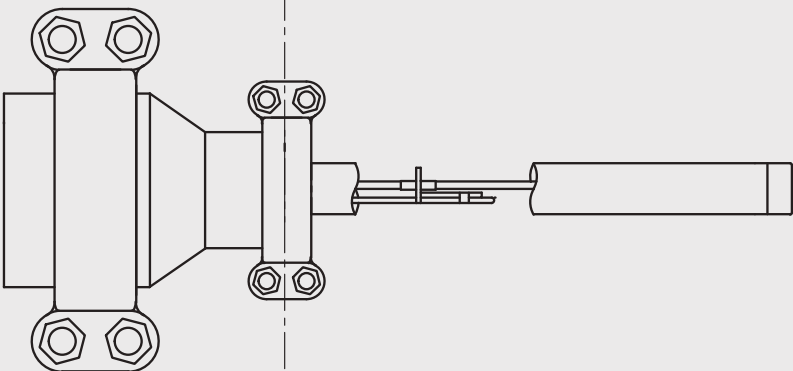
Flanges in accordance with applicable standards, such as ANSI/ASME B16.5, EN 1092-1, DIN 2527 or to customer specification

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

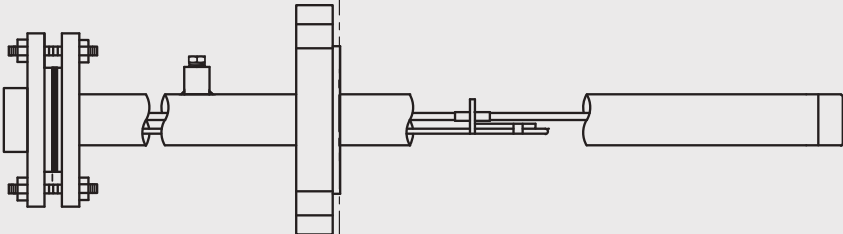
Each multipoint thermometer model Tx96-O is designed and manufactured according to individual customer specifications.

Process connection options

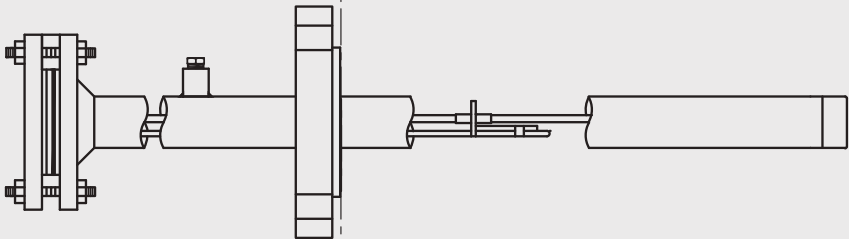
Seal clamp connector



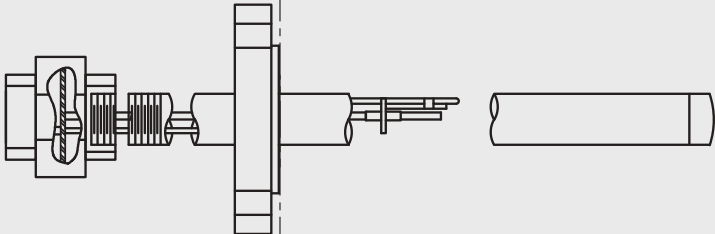
Seal flange



Seal plate

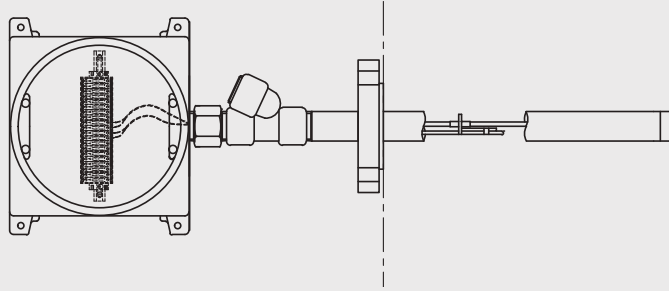


Support plate

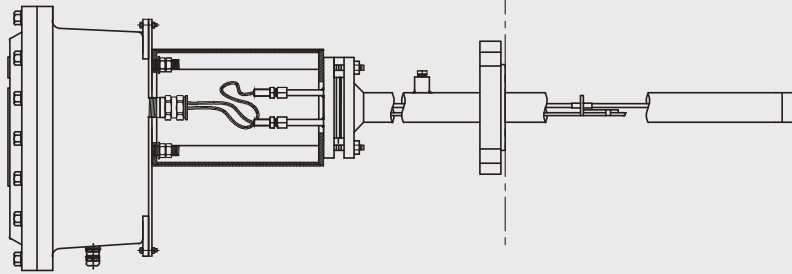


■ Neck tube

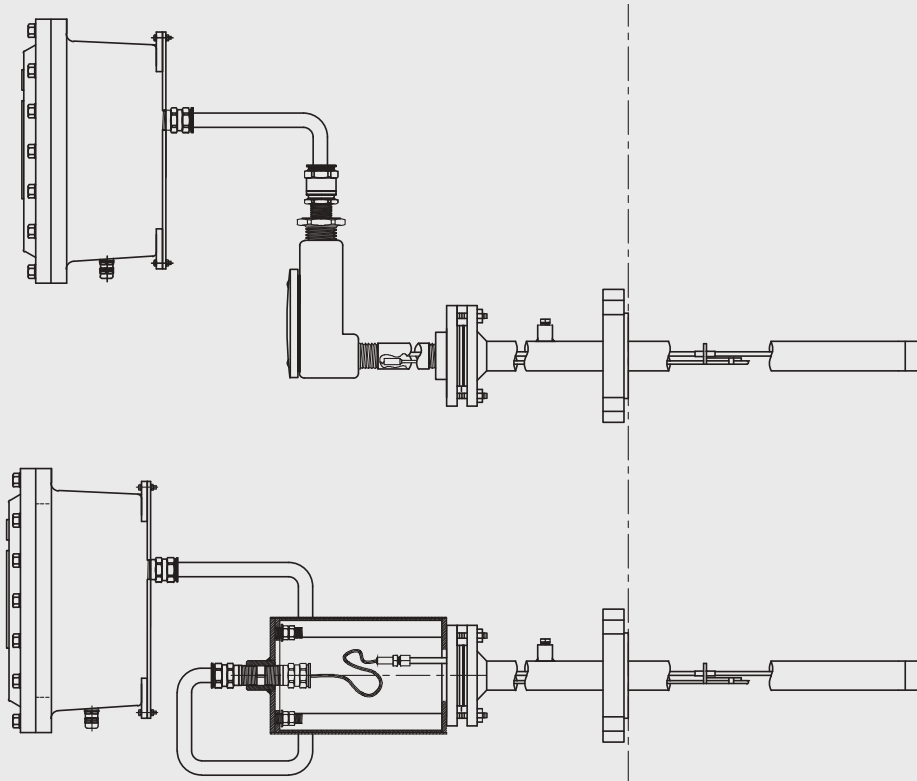
Case, direct attachment



Case, offset attachment with shroud/support

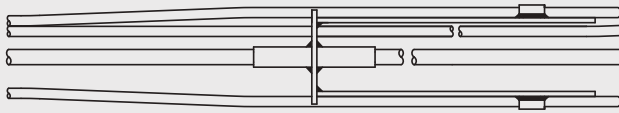


Case, remote attachment with conduit

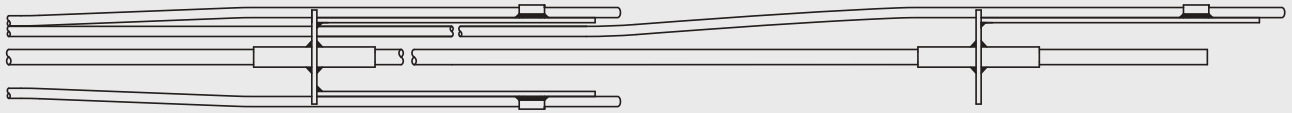


■ **Element**

Design with spring element on both sides



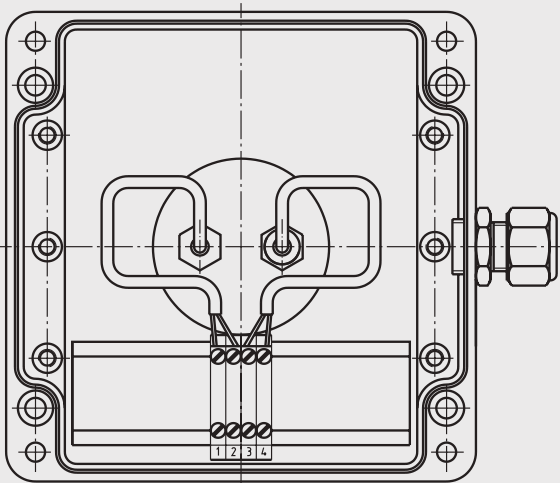
Design with spring element on single side



■ **Terminal enclosure**

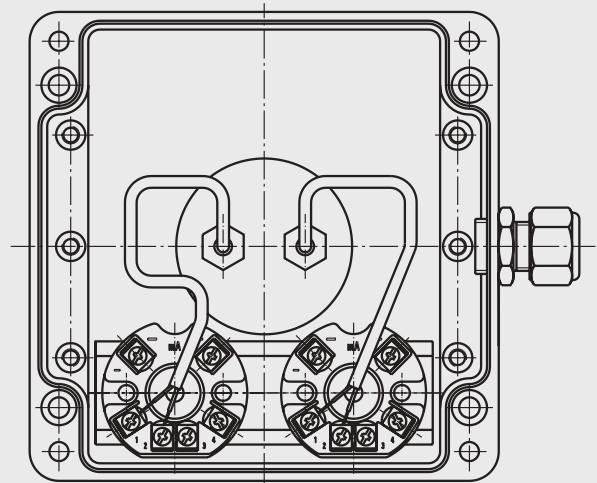
Cable compression fittings in accordance with customer specification

Connection terminal



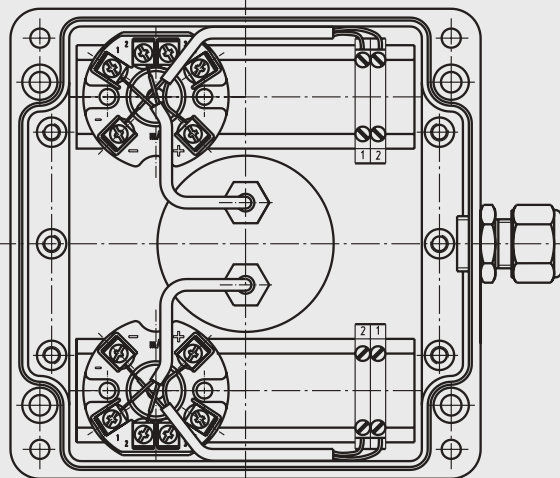
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Transmitter



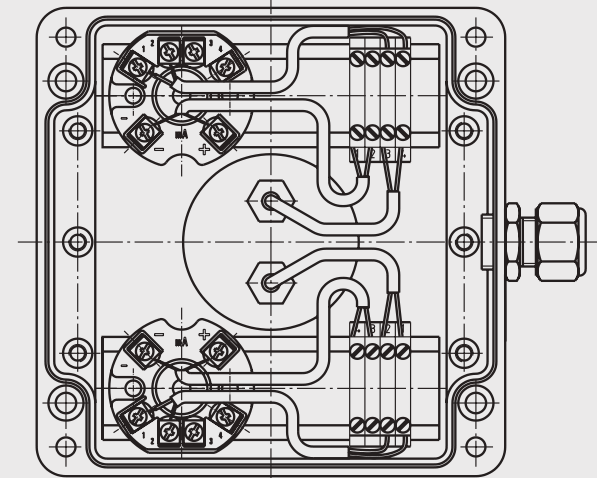
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Transmitter on terminal



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Terminal on transmitter on terminal

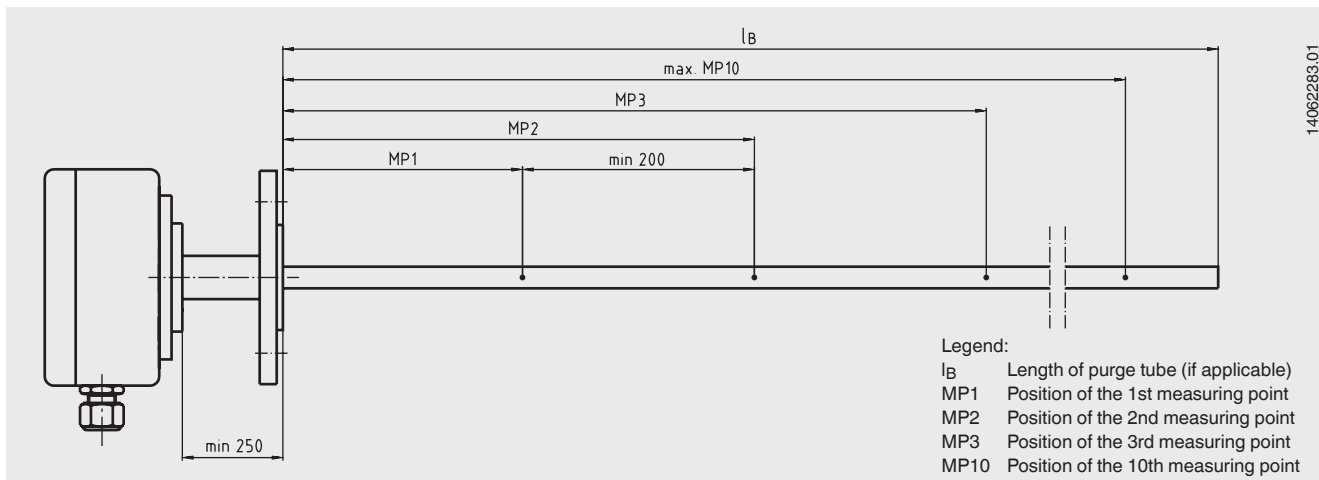


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The actual wiring can deviate from the illustration in the data sheet.

Each multipoint thermometer model Tx96-O is designed and manufactured according to individual customer specifications. In multipoint thermometers with explosion protection, the terminal enclosure dimensions can deviate considerably from the data sheet specifications, depending on design.

Position of the measuring points



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