

# Electrical thermometer with tapered thermowell

## For shipbuilding industry

### Models TR293, TC293

WIKA data sheet TE 69.25



#### Applications

- Exhaust gas temperature measurement in diesel engines and turbines
- For ON-, Off-shore plants

#### Special features

- Robust
- Medium temperature to 850 °C with thermocouple, to 600 °C with resistance thermometer
- GL and LR approval



Electrical thermometer model Tx293

#### Description

These model Tx293 electrical thermometers are used for the measurement of exhaust gas temperatures on diesel engines and turbines. The standard temperature range is 0 ... 850 °C for thermocouples, 0 ... 600 °C for resistance thermometers. The thermowells are designed for the loads which occur in medium and large power plants.

These thermometers are suitable for ambient temperatures to 200 °C. The process connection is made via male connectors, with a standard insertion length of 202 mm.

## Resistance thermometer for model TR293

### Sensor tolerance value per DIN EN 60751

- Class B

The combination of a 2-wire connection with Class B is not permissible, because the lead resistance of the measuring insert overrides the higher sensor accuracy.

For detailed specifications for Pt100 sensors, see Technical Information IN 00.17 at [www.wika.com](http://www.wika.com).

## Thermocouple for model TC293

### Sensor type

- K (NiCr-Ni) Application range up to 850 °C
- J (Fe-CuNi) Application range up to 600 °C

Listed thermocouples are available both as single or dual thermocouples. The thermocouple will be delivered with an insulated measuring point.

### Tolerance value

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

### Type K

Class	Temperature range	Tolerance value
<b>DIN EN 60584 part 2</b>		
2	-40 ... +333 °C	± 2.5 °C
2	+333 ... +1200 °C	± 0.0075 •  t  <sup>1)</sup>

1) |t| is the value of the temperature in °C irrespective of the sign.

### Type J

Class	Temperature range	Tolerance value
<b>DIN EN 60584 part 2</b>		
2	-40 ... +333 °C	± 2.5 °C
2	+333 ... +750 °C	± 0.0075 •  t  <sup>1)</sup>

1) |t| is the value of the temperature in °C irrespective of the sign.

Tolerance value at selected temperatures in °C

Temperature (ITS 90) °C	Tolerance value Type K °C	Tolerance value Type J °C
0	± 2.5	± 2.5
200	± 2.5	± 2.5
400	± 3.0	± 3.0
600	± 4.5	± 4.5
800	± 6.0	undefined

## Neck

### Material

Stainless steel 1.4571

### Neck length M<sub>H</sub>

50, 100 mm  
others on request

### Diameter

15 mm

## Process connection

### Mode of connection

Threaded connection

### Material

Stainless steel 1.4571

### Thread

G 3/4 B  
others on request

## Thermowell

### Design

from solid-machined material, tapered

### Material

Stainless steel 1.4571

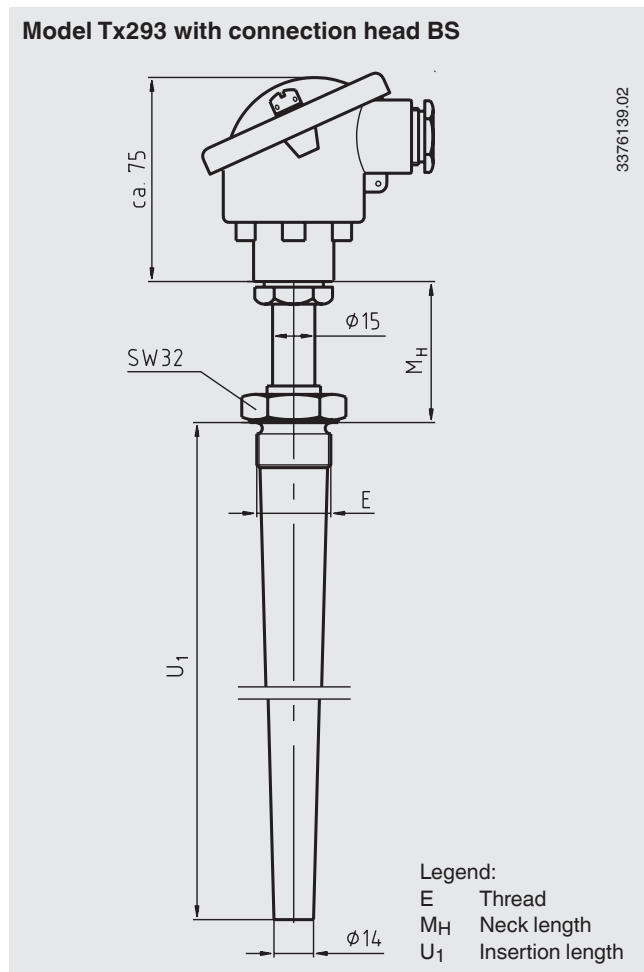
### Diameter

23 mm, tapered to 14 mm

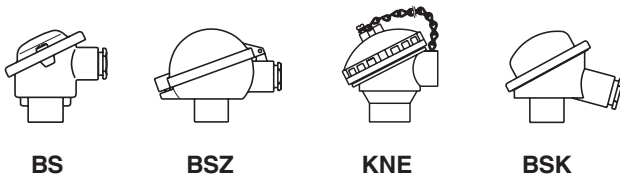
### Insertion length

100, 150, 202, 250 mm  
other versions on request

## Dimensions in mm



## Connection head

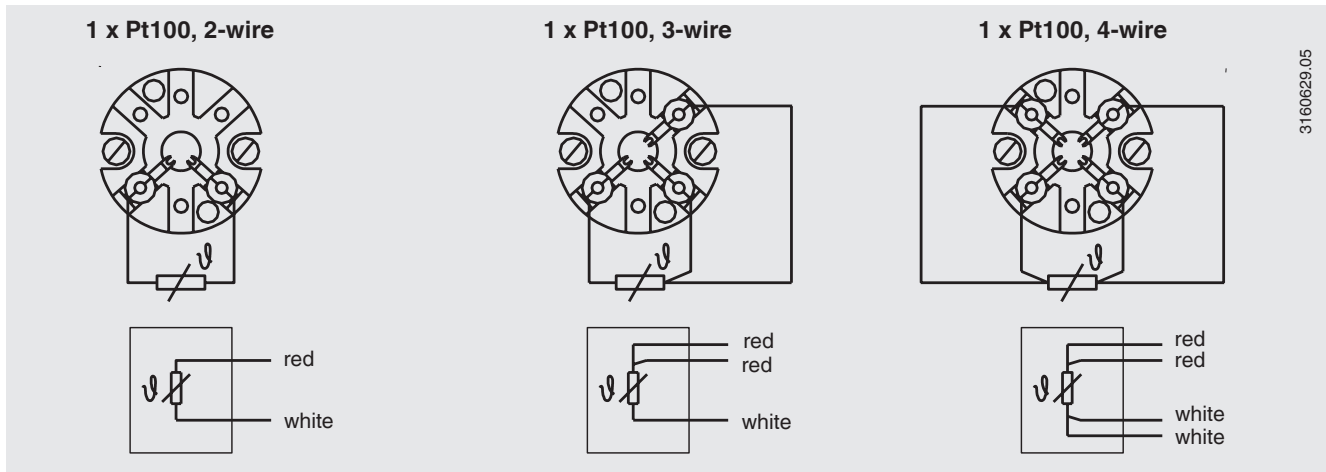


Model	Material	Cable entry	Ingress protection	Cap	Surface finish
<b>BS</b>	Aluminium	M20 x 1.5	IP 54	Cap with 2 screws	Epoxy coated
<b>BSZ</b>	Aluminium	M20 x 1.5	IP 65	Hinged cover with cylinder head screw	Epoxy coated
<b>KNE</b>	Aluminium	M20 x 1.5	IP 65	Screw cover	Epoxy coated
<b>BSK</b>	Plastic	M20 x 1.5	IP 54	Screw cover	not coated

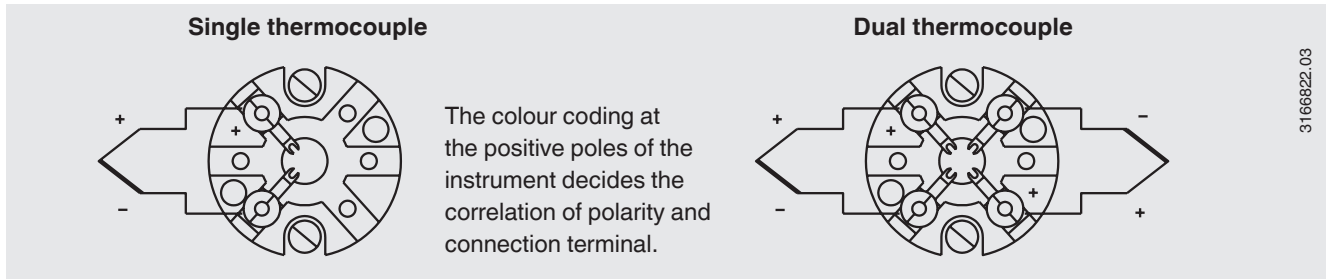
1) Cable gland, metal

# Electrical connection

## Model TR293



## Model TC293



## Colour coding

Sensor type	Standard	Positive	Negative
K	DIN EN 60584	green	white
J	DIN EN 60584	black	white

## Ordering information

Model / Sensor connection method / Process connection / Neck length MH / Insertion length U<sub>1</sub> / Connection head

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