

## Sheathed thermometer, stern tube For shipbuilding industry Models TR791, TC791

WIKA data sheet TE 69.30



### Applications

- Monitoring of temperatures in stern tubes

### Special features

- Robust
- Flexible
- Approval Lloyd's Register
- Optional: with PTFE cable

### Description

Electrical thermometers specifically for the monitoring of temperatures in stern tubes. The flexible sheath and the compression fitting enable individual adjustment to the mounting position in the stern tube.

The flexible part of a sheathed sensor is a mineral-insulated cable, the sheathed cable. It consists of a stainless steel outer sheath in which the internal lead is pressed and isolated within a high-density ceramic mass.

Optional connection box and/or cable available.  
For resistance thermometers a PTFE cable with an aluminium shield is used, suitable up to 200 °C. The PTFE glass fibre cable of the thermocouples is designed with metal braiding and is suitable up to 250 °C.

To secure the cable, a second process connection can be supplied as an option.



Model Tx791 sheathed thermometer with optional connection box

## Resistance thermometer for model TR791

### Sensor tolerance value per DIN EN 60751

- Class B
- Class A (not with 2-wire connection)

The combination of 2-wire connection and Class A is not permissible.

With the 2-wire connection the lead resistance of the cable compounds the error. The error increases with increasing length of the sheath or of the cable.

The thermometers described here are often designed significantly longer than 1000 mm. Therefore, the 3-wire or 4-wire connection should be used.

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

## Thermocouple for model TC791

### Sensor type

- K (NiCr-Ni)
- J (Fe-CuNi)

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>		
1	-40 ... +375 °C	± 1.5 °C
1	+375 ... +1000 °C	± 0.0040 ·  t  <sup>1)</sup>
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>		
1	-40 ... +375 °C	± 1.5 °C
1	+375 ... +750 °C	± 0.0040 ·  t  <sup>1)</sup>
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

## Process connection

### Connection type

Compression fitting

### Material

Stainless steel 1.4571

### Thread

G ¼ B, G ⅜ B, G ½ B

other versions on request

## Probe

### Design

Sheathed cable

### Bending radius

The permissible bending radius is 3-times the sheath diameter.

With the TR791 the probe tip is a rigid tube, approx. 60 mm long.

### Material

Stainless steel 1.4571

### Diameter

3, 4.5, 6.0 mm

### Nominal length

To customer specification, min. 500 mm

## Connection box (option)

### Material

Aluminium, epoxy coated

### Cover

Detachable, 2 mounting screws, EPDM flat seal

### Cable glands

Pg 16

### Ingress protection

IP 67

### Terminal block

Ceramic, max. 1.5 mm<sup>2</sup>, screws captive

### Ground terminal

Present

**Cable (option)**■ **Model TR791****Insulation**

PTFE

**Screen**

Aluminium foil

**Permissible ambient temperature**

-200 ... +200 °C

**Wire material**

Cu (strands)

**Wire cross-section**0.25 mm<sup>2</sup>**Number of wires**

According to the number of sensors and the sensor connection method

**Wire ends**

Blank

**Cable length**

To customer specification

■ **Model TC791****Insulation**

PTFE glass fibre

**Armour**

Galvanised steel braid

**Permissible ambient temperature**

-200 ... +250 °C

**Wire material**

Compensating cable depending on type of sensor (lead)

**Wire cross-section**0.22 mm<sup>2</sup>**Number of wires**

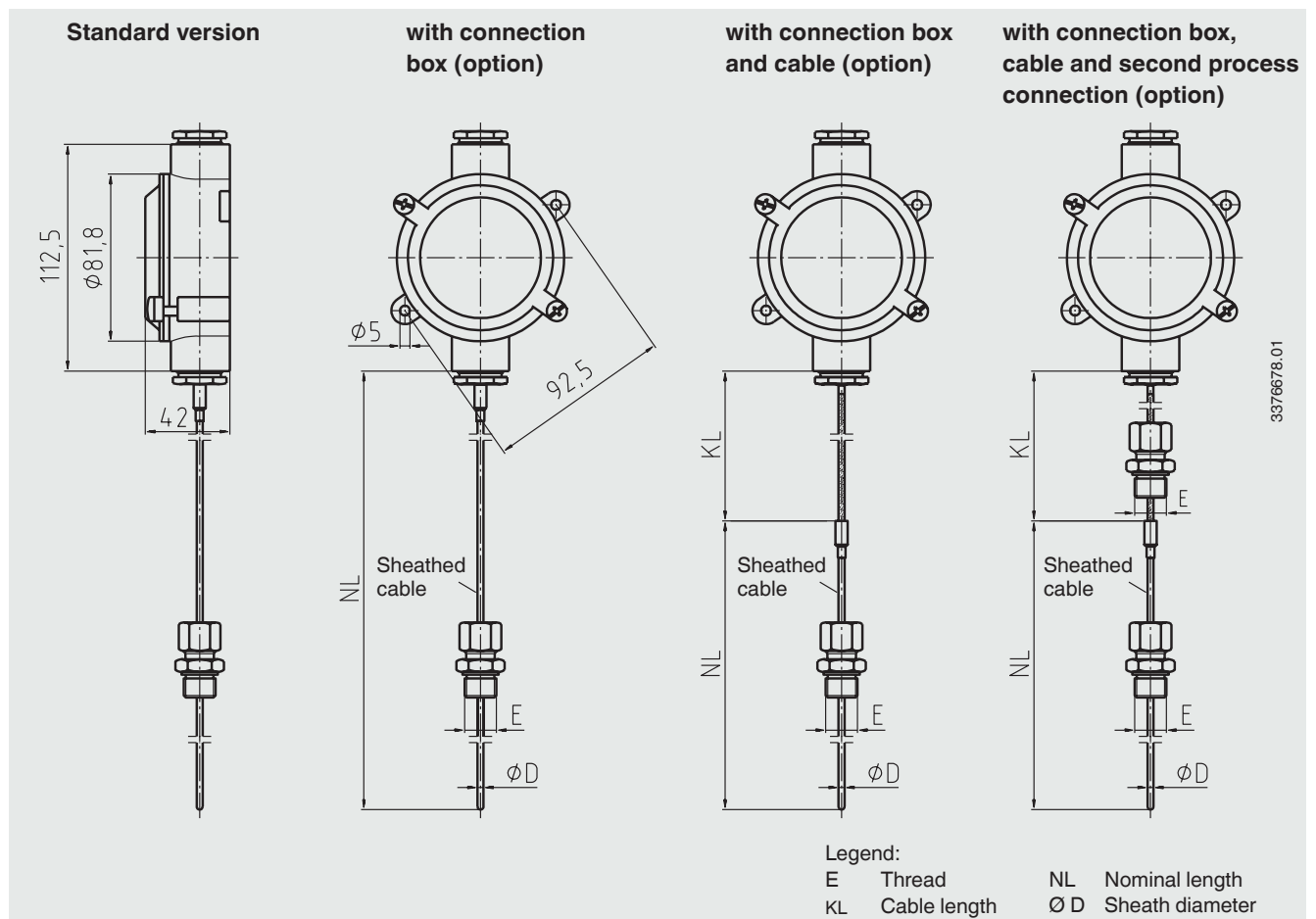
Depends on the number of sensors

**Wire ends**

Blank

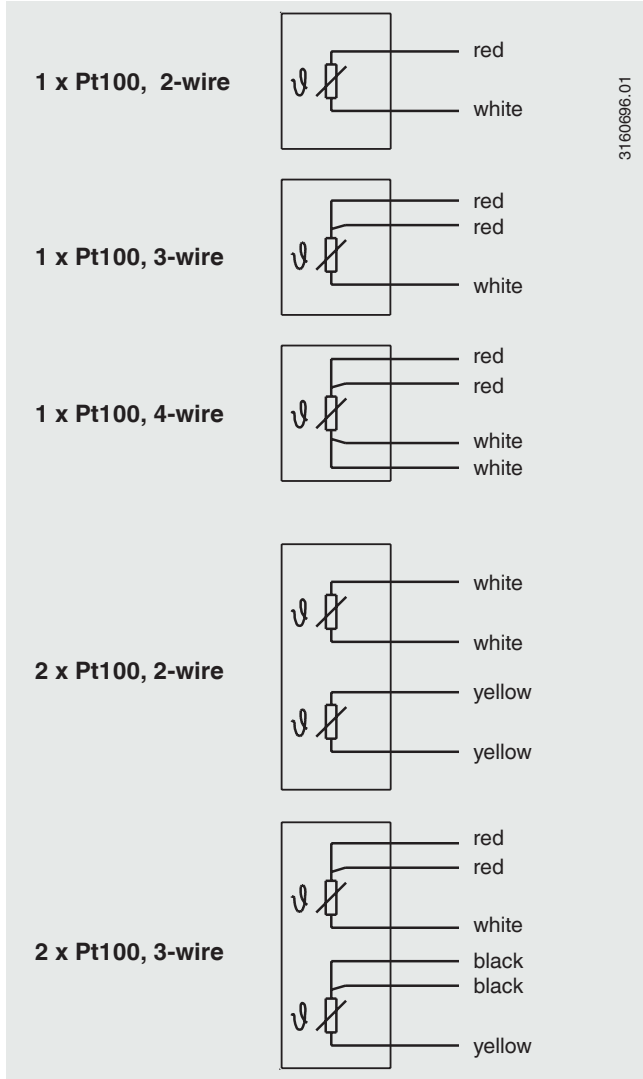
**Cable length**

To customer specification

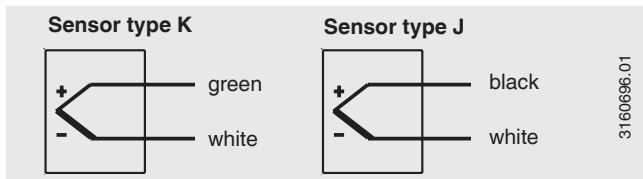
**Dimensions in mm**

## Electrical connection

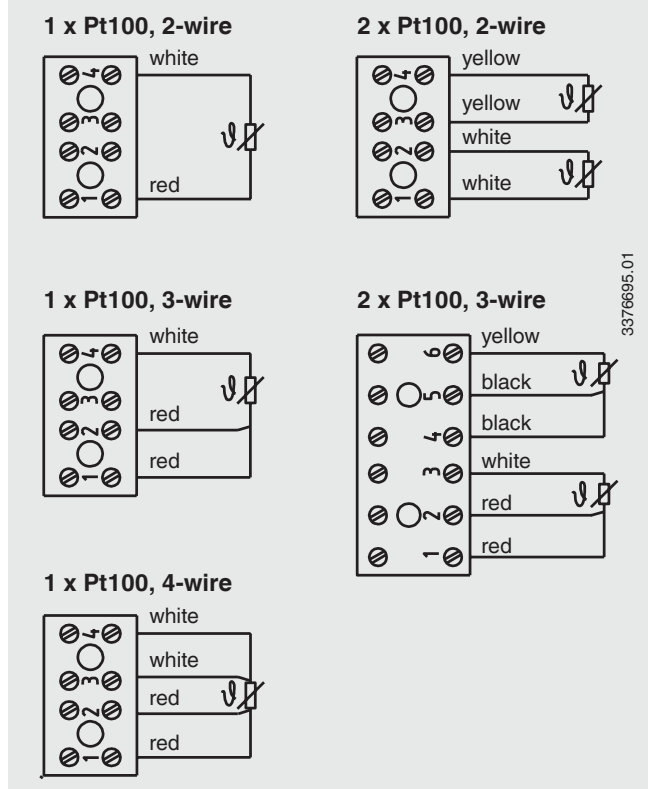
### Model TR791 with cable



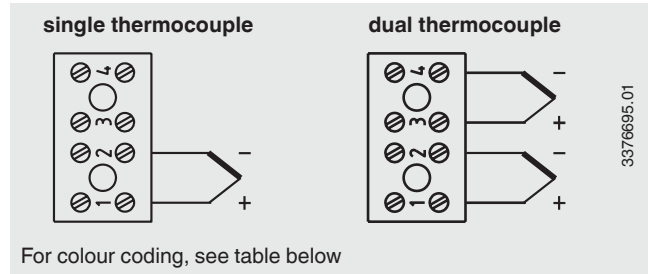
### Model TC791 with cable



### Model TR791 with terminal block in connection box



### Model TC791 with terminal block in connection box



### Colour coding

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

### Ordering information

Model / Sensor type and number of sensors / Sensor connection method / Tolerance value / Process connection / Nominal length NL / Cable / Cable length KL / Connection box

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