

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
- GL and LR approval
- 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.

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
DIN EN 60584 part 2		
1	-40 ... +375 °C	± 1.5 °C
1	+375 ... +1000 °C	± 0.0040 · t ¹⁾
2	-40 ... +333 °C	± 2.5 °C
2	+333 ... +1200 °C	± 0.0075 · t ¹⁾

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

Type J

Class	Temperature range	Tolerance value
DIN EN 60584 part 2		
1	-40 ... +375 °C	± 1.5 °C
1	+375 ... +750 °C	± 0.0040 · t ¹⁾
2	-40 ... +333 °C	± 2.5 °C
2	+333 ... +750 °C	± 0.0075 · t ¹⁾

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 mm², 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 mm²

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)

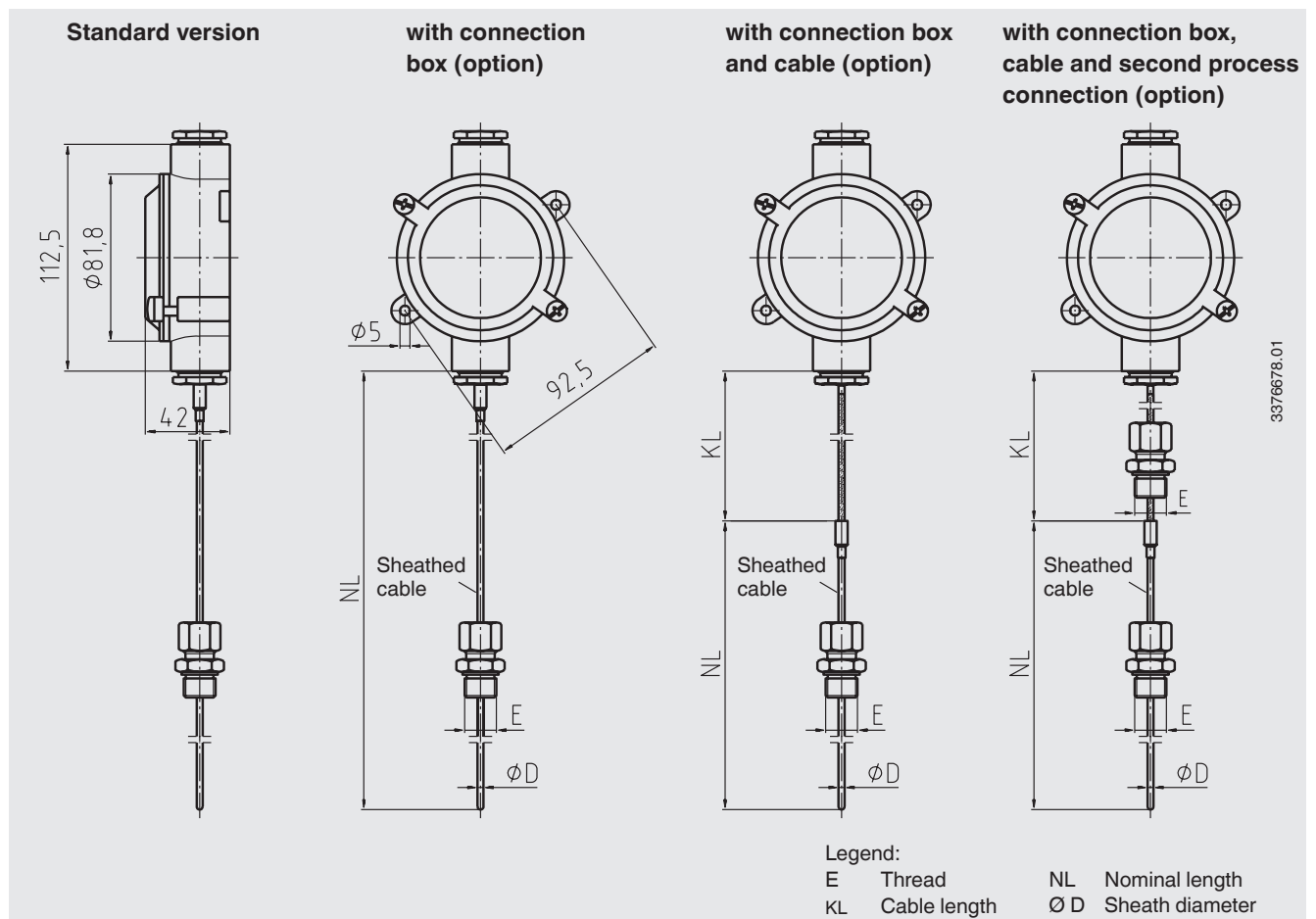
Wire cross-section
0.22 mm²

Number of wires
Depends on the number of sensors

Wire ends
Blank

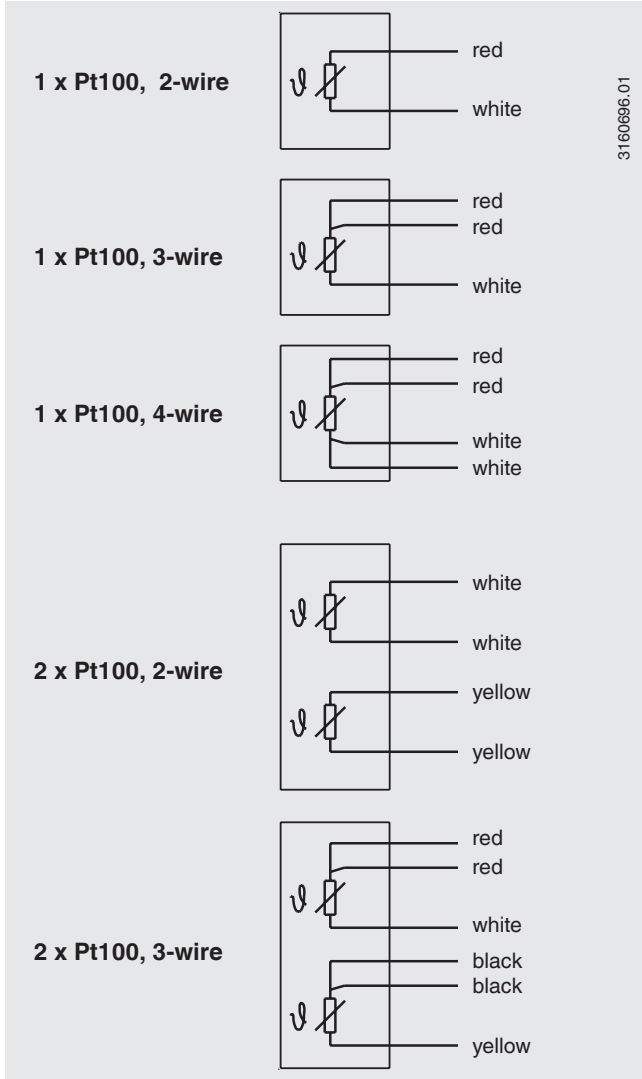
Cable length
To customer specification

Dimensions in mm

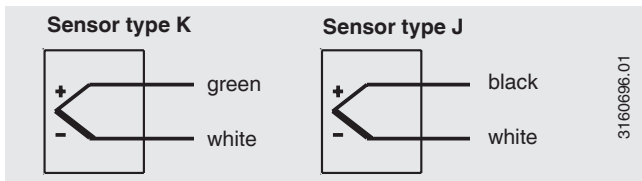


Electrical connection

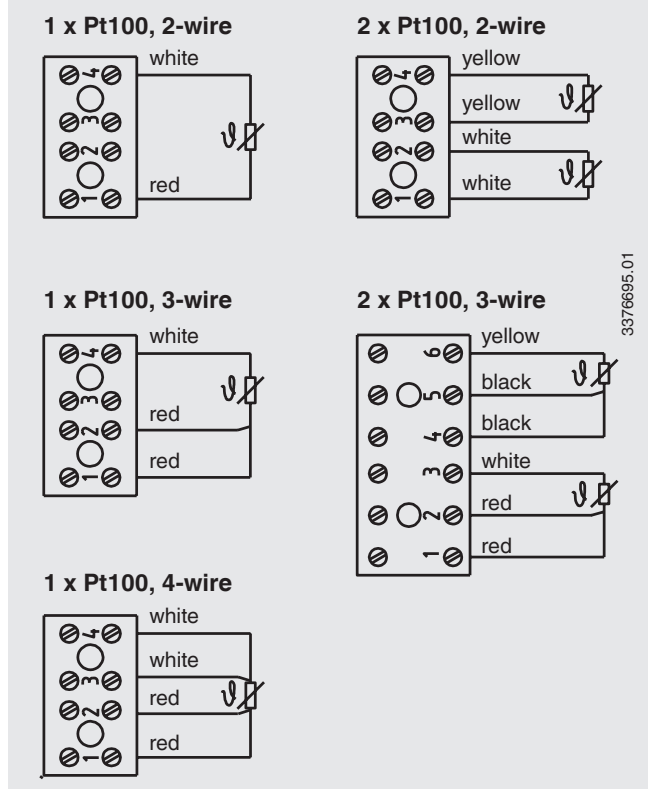
Model TR791 with cable



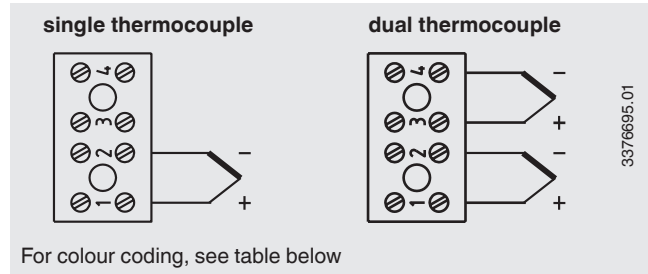
Model TC791 with cable



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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