

## Resistance thermometer

### Model TR60-A, outdoor resistance thermometer

### Model TR60-B, indoor resistance thermometer

WIKA data sheet TE 60.60



#### Applications

- Ambient temperature measurement
- Air-conditioned rooms, cold-storage rooms, storehouses, grain storages, malt storages etc.

#### Special features

- Application ranges from -40 ... +80 °C
- Optional transmitter available
- Impact-resistance plastic case
- Intrinsically-safe designs (ATEX) for model TR60-A



Fig. left: outdoor resistance thermometer model TR60-A  
Fig. right: indoor resistance thermometer model TR60-B

## Description

#### Outdoor resistance thermometer, model TR60-A

This model features a closed probe tube and is intended for damp or humid rooms and outdoor applications. For application in hazardous areas, intrinsically-safe versions are available.

#### Indoor resistance thermometer, model TR60-B

This model is intended for dry rooms. The probe tube around the sensor is perforated, and as a result of this perforation the sensor is in direct contact with the ambient air. This considerably improves the response time.

The range of applications is enhanced by the addition of optional analogue or digital transmitters.

## Sensor

The sensor is located in the tip of the measuring insert.

### Sensor connection method

- 2-wire The lead resistance is recorded as an error in the measurement.
- 3-wire With a cable length of approx. 30 m or longer, measuring errors can occur.
- 4-wire The internal lead resistance of the connecting wires is negligible.

### Sensor tolerance value per DIN EN 60751

- Class B
- Class A
- Class AA

The combinations of a 2-wire connection with Class A / Class AA are not permissible, since the lead resistance of the measuring insert negates the higher sensor accuracy.

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

## Probe

The standard probe has a 6 mm diameter and is available with 1 x Pt100 or 2 x Pt100 in 2-wire, 3-wire or 4-wire circuit.

Specifications	Model TR60-A Outdoor resistance thermometer	Model TR60-B Indoor resistance thermometer
<b>Probe</b>		
■ Design	rigid tube, closed	rigid tube, perforated in the area of the sensor
■ Material	Stainless steel 1.4571	
■ Length of probe	60 mm <sup>1)</sup>	
■ Probe diameter	6 mm <sup>1)</sup>	
<b>Case</b>		
■ Design	for wall mounting	
■ Material	ABS plastic or aluminium	
■ Dimensions	see dimensions <sup>1)</sup>	
<b>Cable entry</b>	M16 x 1.5 <sup>1)</sup>	
<b>Permissible temperature ranges</b>		
■ Ambient	-40 ... +80 °C <sup>2)</sup>	
■ Storage	-40 ... +80 °C	
<b>Ingress protection</b>	IP 65 per EN 60529 / IEC 529	IP 20 per EN 60529 / IEC 529
<b>Weight</b>	approx. 0.4 kg	

<sup>1)</sup> Others on request

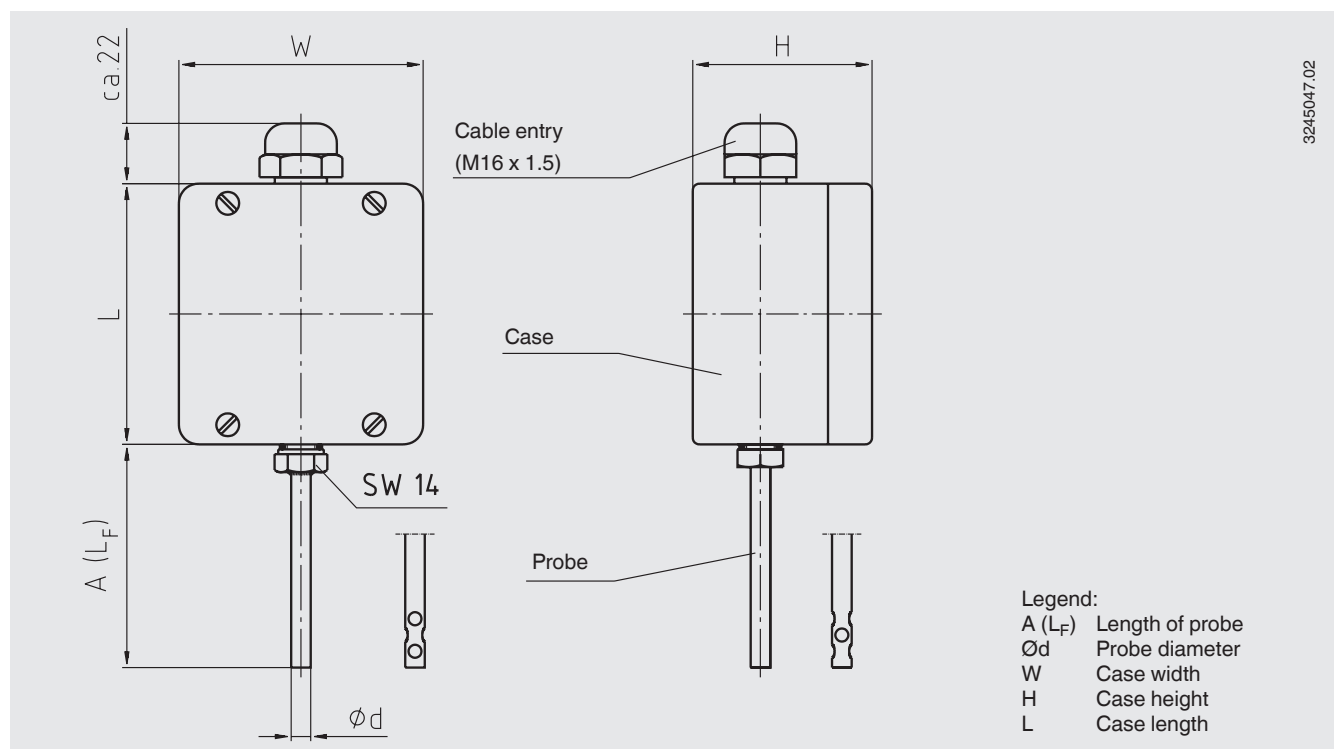
<sup>2)</sup> The working temperature of the indoor resistance thermometer is limited by the permissible ambient temperature of the case.

## Transmitter (option)

A transmitter can be mounted into the case. This is done by mounting the transmitter in place of the connection terminals.

Model	Description	Explosion protection	Data sheet
T19	Analogue transmitter, configurable	without	TE 19.03
T24	Analogue transmitter, PC configurable	optional	TE 24.01
T12	Digital transmitter, PC configurable	optional	TE 12.03
T32	Digital transmitter, HART® protocol	optional	TE 32.04
T53	Digital transmitter FOUNDATION™ Fieldbus and PROFIBUS® PA	Standard	TE 53.01

## Dimensions in mm



Case	Dimensions in mm				
	L	W	H	A (L <sub>F</sub> )	Ød
Plastic (ABS)	82	80	55	60	6
Aluminium	80	75	57	60	6

## Explosion protection (option, only for model TR60-A)

Model TR60-A resistance thermometers are available with a EC type-examination certificate for "intrinsically safe", Ex-i, ignition protection.

These instruments comply with the requirements of 94/9/EC (ATEX) directive for gas and dust. Manufacturer's declarations in accordance with NAMUR NE24 are also available.

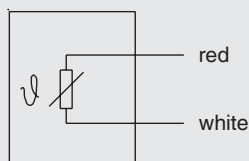
The classification/suitability of the instrument (permissible power,  $P_{max}$  as well as the permissible ambient temperature) for the respective category can be seen on the EC type-examination certificate and in the operating instructions.

Built-in transmitters have their own EC type-examination certificate. The permissible ambient temperature ranges of the built-in transmitters can be taken from the corresponding transmitter approval. The system operator is responsible for using suitable thermowells.

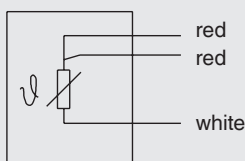
## Electrical connection

### Connection terminals located in the case

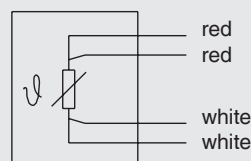
1 x Pt100, 2-wire



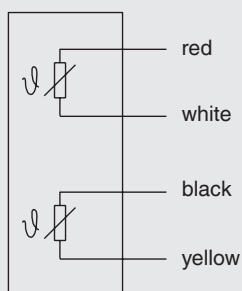
1 x Pt100, 3-wire



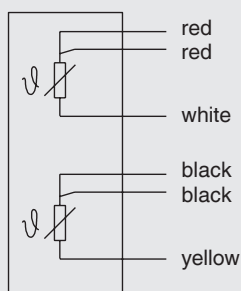
1 x Pt100, 4-wire



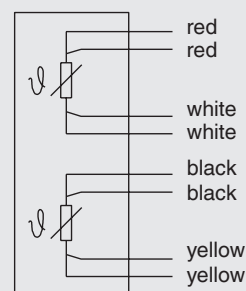
2 x Pt100, 2-wire



2 x Pt100, 3-wire



2 x Pt100, 4-wire



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For the electrical connections of built-in temperature transmitters see the corresponding transmitter data sheets or operating instructions.

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