

## Analogue temperature transmitter Model T91.30, rail mounting version

WIKA data sheet TE 91.02



for further approvals  
see page 4

### Applications

- Plant construction
- Power engineering
- Heating, air-conditioning, ventilation, refrigeration

### Special features

- Versions for Pt100 / Pt1000 or thermocouples
- Output 0 ... 10 V, 3-wire
- Error signalling in the event of sensor break
- High accuracy
- Compact and value for money



Analogue temperature transmitter, model T91.30

### Description

The analogue temperature transmitters of the T91 model series are matched to the specific requirements of industry. They are particularly suitable for direct connection to evaluation instruments with voltage inputs such as PLC's or A-D conversion cards in PC's.

The temperature transmitters convert the temperature-dependent change in resistance of resistance thermometers or the temperature-dependent voltage change in thermocouples into a 0 ... 10 V output signal. With this standardised signal, the measured temperature values can be transmitted simply and safely.

The temperature transmitters of the T91 model series are fixed-range transmitters which are supplied with the required measuring ranges in line with the customer's requirements. A later fine-adjustment of the zero point and the span can be made with potentiometers once fitted.

The rail-mounted transmitter T91.30.232 offers a special feature. The sensor input side is galvanically isolated from the analogue output. Thus the T91.30.232 is especially suited for fast measurements of non-isolated or base-metal thermocouples.

These transmitters in rail mounting cases are suitable for all standard rails to DIN EN 50022-35.

## Specifications

Specifications	Model T91.30				
	214	224	254	212	232
<b>Input</b>	Pt100/Pt1000 IEC 60751 2- / 3- / 4-wire		Pt100/Pt1000 IEC 60751 2- / 3-wire	Thermocouples IEC 60751 K, J (L), T (U)	
<b>Minimum span</b>	20 K			200 K	
<b>Maximum span</b>	850 K			-	
<b>Measuring ranges</b>	on request ("Possible measuring ranges" see page 3)			on request ("Possible measuring ranges" see page 3)	
<b>Measuring current</b>	0.8 ... 1 mA <sup>1)</sup>			-	
<b>Setting range</b>					
<ul style="list-style-type: none"> <li>■ Zero point potentiometer (Z)</li> <li>■ Span potentiometer (S)</li> </ul>	±5 K ±5 K		±5 K ±5 K		
<b>Cold junction compensation</b>	-			yes	
<b>Analogue output</b>	0 ... 10 V, short-circuit proof, 3-wire <sup>2)</sup>			0 ... 10 V, short-circuit proof, 3-wire <sup>2)</sup>	
<b>Linearisation</b>	Linear to temperature per IEC 60751			Linear to voltage	
<b>Measuring deviation</b>	< 0.1 % FS		< 1 % FS	< 1 % FS	
<b>Temperature coefficient</b>					
<ul style="list-style-type: none"> <li>■ Zero point</li> <li>■ Span</li> </ul>	< 100 ppm/°C < 100 ppm/°C		< 100 ppm/°C < 100 ppm/°C		
<b>Error influence of the cold junction compensation</b>	-			< 0.5 °C	
<b>Rise time (response time)</b>	< 0.1 s			< 0.1 s	
<b>Signalling of sensor break</b>	> 10 V			> 10 V	
<b>Sensor short circuit</b>	0 V			Voltage value for ambient temperature	
<b>Minimal load resistance</b>	3 kΩ			3 kΩ	
<b>Maximum current supply</b>	20 mA	40 mA	20 mA	20 mA	40 mA
<b>Insulation voltage (Input to analogue output)</b>	-			-	1 kV
<b>Power supply</b>	DC 15 ... 35 V			DC 15 ... 35 V	
<b>Input of power supply</b>	protected against reverse polarity			protected against reverse polarity	
<b>Maximum permissible residual ripple</b>	< 10 %			< 10 %	
<b>Electromagnetic compatibility</b>	EN 61326 emission (group 1, class B) and interference immunity (industrial application)				
<b>Storage temperature</b>	-25 ... +85 °C			-25 ... +85 °C	
<b>Operating temperature</b>	-25 ... +85 °C			-25 ... +85 °C	
<b>Maximum permissible humidity</b>	< 95 %			< 95 %	
<b>Vibration</b>	5 g / 10 ... 200 Hz			5 g / 10 ... 200 Hz	
<b>Case material</b>	Polycarbonate			Polycarbonate	
<b>Ingress protection</b>					
<ul style="list-style-type: none"> <li>■ Case</li> <li>■ Connection terminals</li> </ul>	IP30 per IEC/EN 60529 IP10 per IEC/EN 60529		IP30 per IEC/EN 60529 IP10 per IEC/EN 60529		
<b>Connection terminals</b>	Screw terminals			Screw terminals	
<b>Connection cross-section of terminals</b>	0.2 ... 2.5 mm <sup>2</sup>			0.2 ... 2.5 mm <sup>2</sup>	
<b>Weight</b>	approx. 60 g		approx. 35 g	approx. 60 g	
<b>Dimensions</b>	75 x 25 x 53 mm		75 x 15 x 53 mm	75 x 25 x 53 mm	

1) Depending on sensor resistance

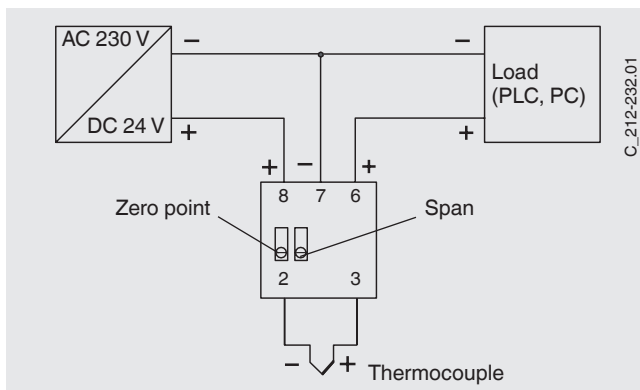
2) Output signals e.g. 0 ... 2.5 V, 0 ... 5 V or 1 ... 5 V on request

## Possible measuring ranges

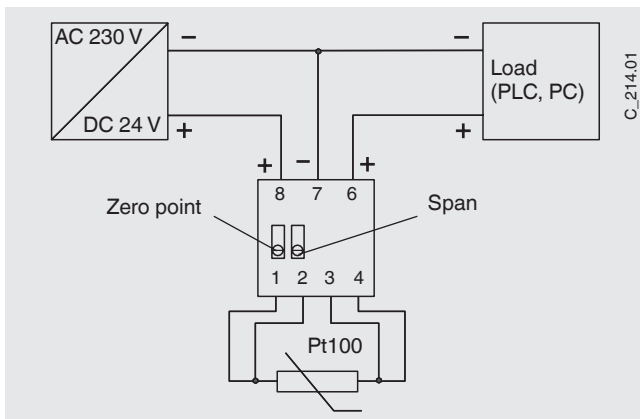
Input	Maximum range in °C		Span in K	
	Minimum beginning	Maximum end	Minimum	Maximum
Pt100	-200 °C	+850 °C	20 K	850 K
Pt1000	-200 °C	+380 °C	20 K	400 K
TC type T	-200 °C	+400 °C	200 K	600 K
TC type J	-100 °C	+1,200 °C	200 K	1,300 K
TC type L	-200 °C	+900 °C	200 K	1,100 K
TC type K	-200 °C	+1,320 °C	200 K	1,520 K
TC type U	-200 °C	+600 °C	200 K	600 K

## Designation of connection terminals

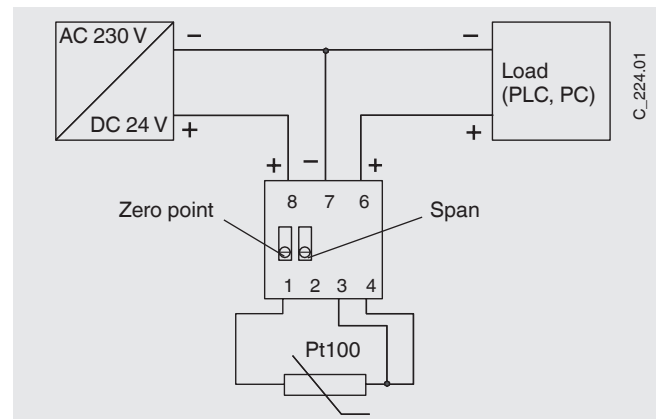
### Models T91.30.212, T91.30.232



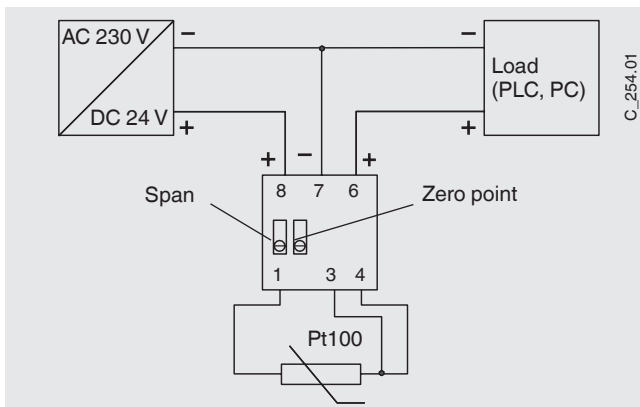
### Model T91.30.214



### Model T91.30.224



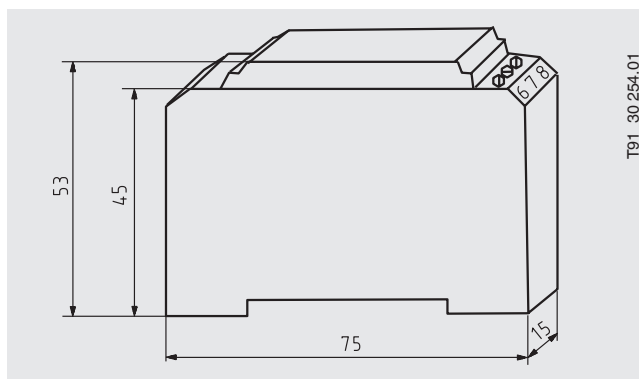
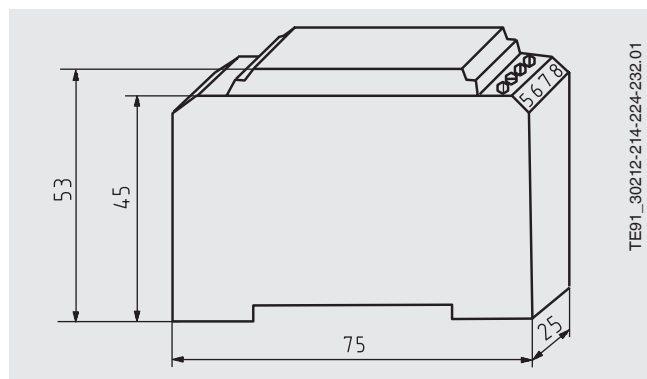
### Model T91.30.254









## Dimensions in mm

Models T91.30.212, T91.30.214, T91.30.224, T91.30.232

Model T91.30.254



## Approvals

Logo	Description	Country
	<b>EU declaration of conformity</b> EMC directive	European Union
	<b>EAC (option)</b> Electromagnetic compatibility	Eurasian Economic Community
	<b>GOST (option)</b> Metrology, measurement technology	Russia
	<b>KazInMetr (option)</b> Metrology, measurement technology	Kazakhstan
-	<b>MTSCHS (option)</b> Permission for commissioning	Kazakhstan
	<b>BelGIM (option)</b> Metrology, measurement technology	Belarus
	<b>Uzstandard (option)</b> Metrology, measurement technology	Uzbekistan

## Certificates (option)

- 2.2 test report
- 3.1 inspection certificate

Approvals and certificates see website

## Ordering information

Model / Input / Output signal / Measuring range / Options

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**WIKAL Alexander Wiegand SE & Co. KG**  
Alexander-Wiegand-Straße 30  
63911 Klingenberg/Germany  
Tel. +49 9372 132-0  
Fax +49 9372 132-406  
info@wika.de  
www.wika.de