

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

1) Depending on sensor resistance

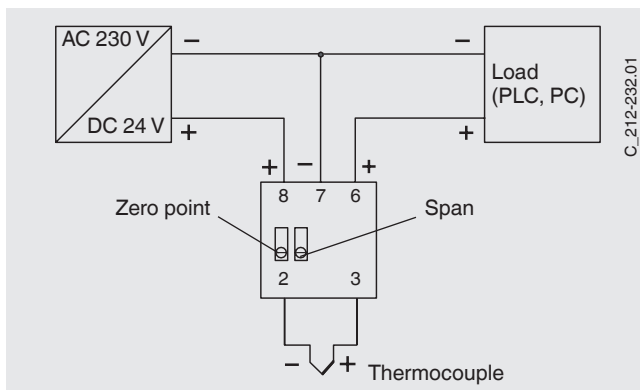
2) Output signals e.g. 0 ... 2.5 V, 0 ... 5 V or 1 ... 5 V on request

Possible measuring ranges

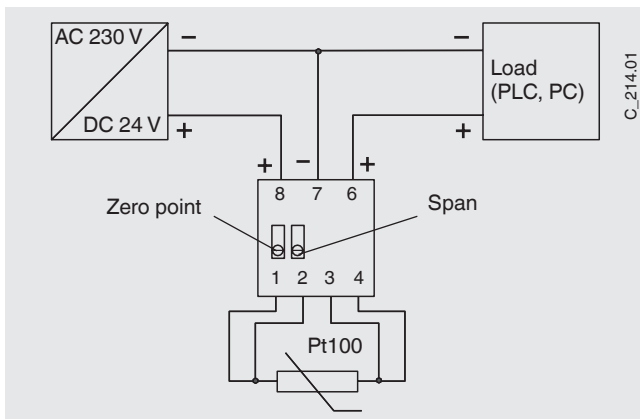
Input	Maximum range in °C		Span in K	
	Minimum beginning	Maximum end	Minimum	Maximum
Pt100	-200 °C	+850 °C	20 K	850 K
Pt1000	-200 °C	+380 °C	20 K	400 K
TC type T	-200 °C	+400 °C	200 K	600 K
TC type J	-100 °C	+1,200 °C	200 K	1,300 K
TC type L	-200 °C	+900 °C	200 K	1,100 K
TC type K	-200 °C	+1,320 °C	200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

Designation of connection terminals

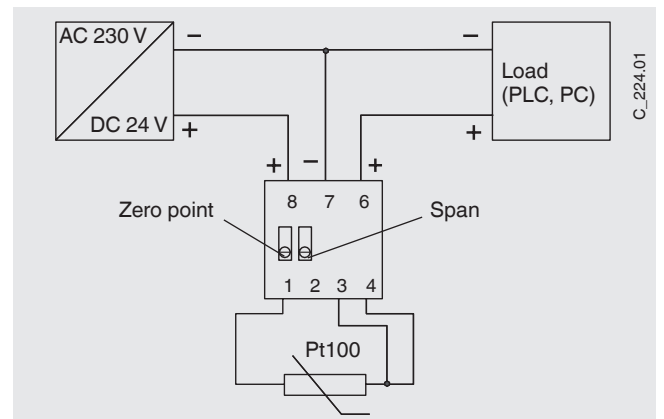
Models T91.30.212, T91.30.232



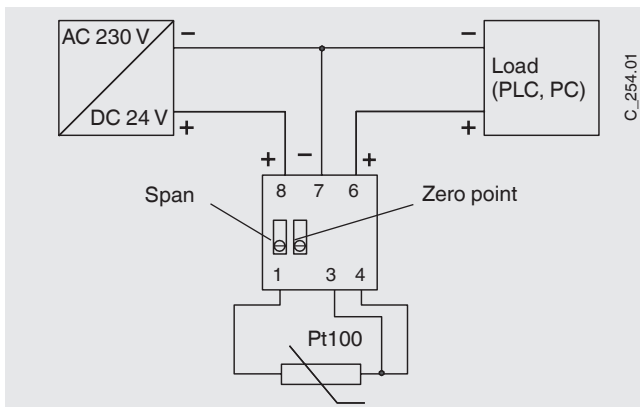
Model T91.30.214



Model T91.30.224



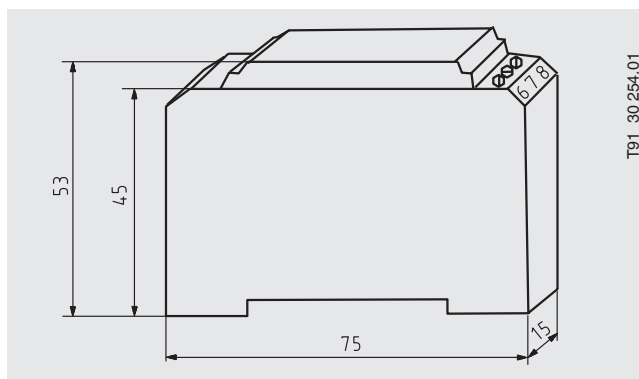
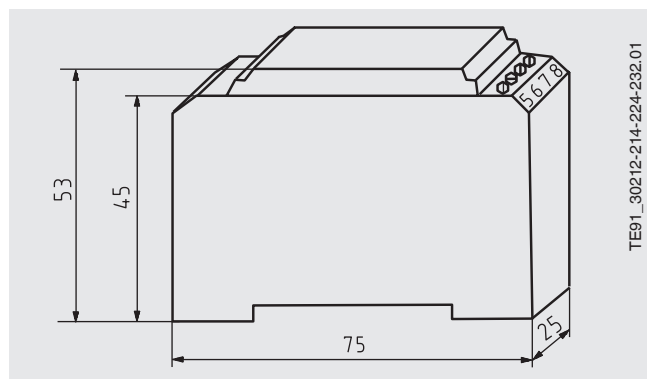
Model T91.30.254









Dimensions in mm

Models T91.30.212, T91.30. 214, T91.30. 224, T91.30. 232

Model T91.30.254



Approvals

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