

## PT Compact PT Compact plus

Screw - in resistance thermometer



### Description

The resistance thermometer „PT Compact“ is designed for temperature measurement in processes with medium and low pressures. Measurement ranges between  $-200^{\circ}\text{C}$  and  $+600^{\circ}\text{C}$  cover the majority of your temperature measuring tasks.

The thermometers are available with platinum sensors PT100 or PT1000 in 2 -, 3 -, 4 or 2x2-wire circuit. If the measuring signal has to be transmitted over longer distances, the PT Compact plus is available with an integrated transmitter. This transmitter converts the resistance of the platinum sensor into a linear temperature signal 4-20 mA or 0-10 V.

Different process connections, as well as adjustable compression fittings underline the variability of this measuring instrument. To achieve fast reaction times a version with a tapered stem is also available.

The electrical connection is realized with an L-plug according to DIN EN 175301-803A. Optionally an M12x1 connection is available.

All thermometer parts which get in contact to the process medium are made of stainless steel. The housing and the replaceable measuring insert are bolted together by a knurled nut. This allows the exchange of the measuring insert without removing the thermometer from the process. Even an upgrade is possible from PT Compact to PT Compact plus or to TC400, a compact RTD with LED-display and switching output, without opening the process connection.

### Features

- compact dimensions
- easy handling
- cost-efficient
- short delivery times
- optional with transmitter 4-20mA or 0-10V
- simple exchange
- customized solutions

### Models

- $-50^{\circ}\text{C}$  up to  $+200^{\circ}\text{C}$  ( $-60\dots400^{\circ}\text{F}$ )
- $-50^{\circ}\text{C}$  up to  $+400^{\circ}\text{C}$  ( $-60\dots750^{\circ}\text{F}$ )
- $-50^{\circ}\text{C}$  up to  $+600^{\circ}\text{C}$  ( $-60\dots1100^{\circ}\text{F}$ )
- $-200^{\circ}\text{C}$  up to  $+600^{\circ}\text{C}$  ( $-300\dots1100^{\circ}\text{F}$ )

### Measuring ranges (with transmitter)

- $0\dots50^{\circ}\text{C}$ ;  $0\dots100^{\circ}\text{C}$ ;  $0\dots120^{\circ}\text{C}$
- $0\dots200^{\circ}\text{F}$ ;  $0\dots500^{\circ}\text{F}$ ;  $-50\dots300^{\circ}\text{F}$
- according to customers requirements

### Applications

- engineering
- heating and cooling circuits, air condition technology
- plant construction
- environment engineering

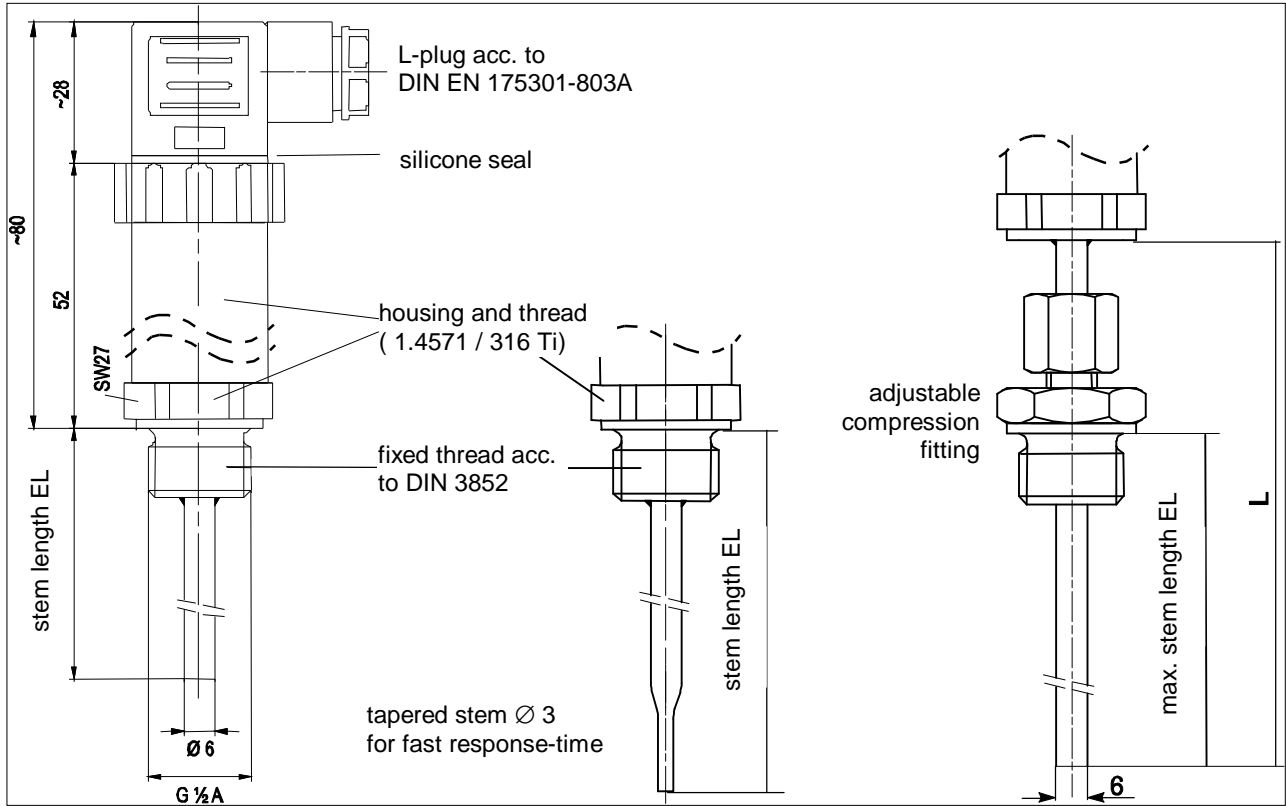
**Models:** TEP11  
TES11. TES12. TES13. TES14

## Technical data

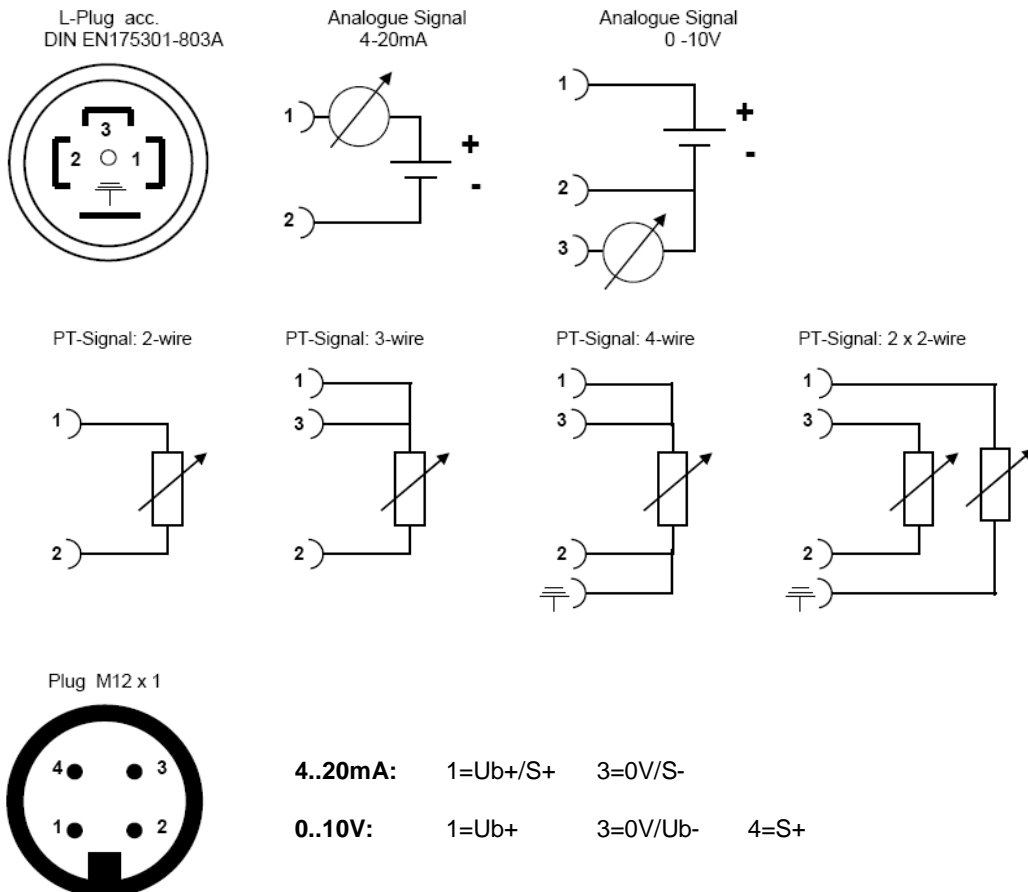
	PT Compact		PT Compact plus
Model	TES11 -> 2-wire TES12 -> 3-wire TES13 -> 4-wire TES14 -> 2 x 2-wire		TEP11 -> 4-20 mA TEP11 -> 0-10 V
Sensor	PT100 class B optional PT100 class A	PT1000 class B optional PT1000 class A	PT100 class B optional PT100 class A
Output signal and supply voltage	PT100	PT1000	4-20 mA, 2-wire supply voltage: 10 – 30 V DC ripple < 10%  0-10 V, 3-wire supply voltage: 12 – 30 V DC, ripple < 10%
Error signal			sensor burnout: 23mA sensor short circuit: 3,3 mA
Temperature range	standard: -50°C up to +200°C (-60...400°F) -50°C up to +400°C (-60...750°F) -50°C up to +600°C (-60...1100°F) -200°C up to +600°C (-300...1100°F)		
Measuring range	see temperature range	see temperature range	selectable measuring range:  standard version: minimum range 50K maximum range 250K  high temperature versions: minimum range 150K maximum range 800K
Process connections	fixed thread: G ½ A, G ¼ A, G ⅜ A, G ¾ A, ½"NPT, ¼"NPT, M14x1,5 adjustable compression fitting: G ½ A, G ⅜ A, G ¼ A, ½"NPT other connections on request		
Material	stainless steel 1.4571 (316 Ti) other materials or coatings on request		
Stem length and pressure ranges <sup>1)</sup>	<ul style="list-style-type: none"> <li>• Ø3mm fast reaction version with tapered stem up to 12 bar<sup>1)</sup>: stem length 25mm: Ø3 x 0,3mm stem length 50mm up to 100mm: Ø6 x 0,3mm with tapered stem Ø3 x 0,3mm from stem 150mm: Ø8 x 1,75mm with tapered stem to Ø6 x 0,3mm with tapered stem Ø3 x 0,3mm</li> <li>• Ø6 x 0,75mm from stem 50mm to 500mm: up to 40bar<sup>1)</sup></li> <li>• Ø8 x 1,75mm from stem 50mm to 1000mm: up to 100bar<sup>1)</sup></li> <li>• special parts manufactured from full material for pressures up to 600 bar<sup>1)</sup></li> </ul>		
Accuracy			transmitter: <0,5% of measuring range
Ambient temperature	at connector max. 125°C with transmitter max. 85°C		
Storage temperature	-40°C up to +85°C		
Electrical connection	L-plug acc. to DIN EN 175301-803 form A optional: round connector, 4-pin, M12x1		
EMC-resistance			emitted interference acc. DIN EN 61326 breakdown effect acc. to DIN EN 61326
Protection class	IP65 acc. to DIN EN 60529 / IEC 529		

- <sup>1)</sup> Pressure ranges refer to static pressure; Rating depends on:
- process medium
  - process pressure and temperature
  - flow rate
  - Stem design (length, diameter, wall thickness)

## Dimensions



## Wiring Diagrams



## Configuration PT-Compact

Transmitter	4-20 mA	TEP11
	0-10 V	TEP11
Without transmitter	2 wire	TES11
	3 wire	TES12
	4 wire	TES13
	2x2 wire	TES14

### Temperature range, stem and process connection

Diameter	3 mm - tapered, fast reaction stem		1
	6 mm - standard		2
	8 mm		3
Temperature range	-200°C ... +600°C (-300... 1100°F)		1
	-50°C ... +200°C (-60... 400°F)		2
	-50°C ... +400°C (-60... 750°F)		3
	-50°C ... +600°C (-60... 1100°F)		4
Process connection	G 1/2 A		1
	G 1/4 A		2
	G 3/8 A		3
	1/2" NPT		4
	1/4" NPT		5
	M14 x 1,5		6
	G 3/4 A		7
	others (please add plain text)		
Sensor	PT 100	<input type="checkbox"/>	
	PT 1000 (only for models TES, without transmitter)	<input type="checkbox"/>	
Type of process connection	fixed	<input type="checkbox"/>	
	adjustable	<input type="checkbox"/>	
Stem length	50 mm (~2") only with fixed thread	<input type="checkbox"/>	
	75 mm (~3") only with fixed thread	<input type="checkbox"/>	
	100 mm (~4")	<input type="checkbox"/>	
	160 mm (~6")	<input type="checkbox"/>	
	200 mm (~8")	<input type="checkbox"/>	
	300 mm (~12")	<input type="checkbox"/>	
	400 mm (~16")	<input type="checkbox"/>	
	500 mm (~20")	<input type="checkbox"/>	
	other length .....	<input type="checkbox"/>	
Measuring range	0...50°C	<input type="checkbox"/>	
	0...100°C	<input type="checkbox"/>	
	0...120°C	<input type="checkbox"/>	
	0...200°F	<input type="checkbox"/>	
	0...500°F	<input type="checkbox"/>	
		customer specific .....	<input type="checkbox"/>

### Options

Sensor	Class A		<input type="checkbox"/>
Neck tube	Standard for temperature-ranges up to 400°C	50 mm	<input type="checkbox"/>
	Standard for temperature-ranges up to 600°C	100 mm	<input type="checkbox"/>
		customer specific .....	<input type="checkbox"/>
Round connector M12x1, 4-pin			<input type="checkbox"/>

Configuration example: PT Compact plus with transmitter 4-20mA  
 Stem diameter 6mm  
 Temperature range -50...200°C (-60...400°F)  
 Fixed thread G1/2 A  
 Stem length 200mm  
 Measuring range 0...200°F

**TEP11X221xxx (the last three digits= xxx are assigned from tecsis)**

Subject to technical modifications