

The temperature transducers with current or voltage output are designed remote temperature measuring of liquids, steam, air, and of other media in the control and regulation systems for standardised signals 4 to 20 mA or 0 to 10 V processing. The transducer head is made of a plastics material, all metallic parts are made of class DIN 1.4301 stainless steel. The resistance transducer is encapsulated in a shank tube; the leading-in elements of the transducer is comprised of wires, the other ends of which are connected to the converter temperature - current or temperature - voltage, which is positioned in the transducer head. The converter is not provided with a galvanic separation. The signal thereof has a linear dependence on temperature. The operation conditions are met by conventional, chemically nonaggressive environment, in which neither attendance nor maintenance is required by the transducers.

### Summary

Transducers	Current transducers	Voltage transducers
Wall mount	P10I T1/T2	P10U T1/T2
Outdoor Air	P11I T1/T2	P11U T1/T2
Duct Probe	P12I T1/T2	P12U T1/T2
Well insertion probe	P13I T1/T2	P13U T1/T2
Strap - Mount	P14I T1/T2	P14U T1/T2
Quick-response types	P16I T1/T2	P16U T1/T2

T1/T2: measuring range, for example 0/150 means the range of 0 to 150°C.

### Standard lengths L1 and L2

L1 (mm)	L2 (mm)
120	100
180	160
240	220
300	280
360	340
420	400

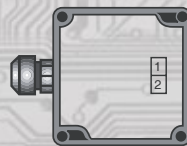
Measuring ranges: - 30 to 60°C  
 0 to 35°C  
 0 to 50°C  
 0 to 100°C  
 0 to 150°C  
 0 to 250°C

### Basic technical parameters

Transducers	Current transducers	Voltage transducers
Power supply $U_{cc}$	11 to 35 V DC	18 to 30 V DC <sup>1)</sup>
Output signal	$I_z = 4$ to 20 mA	$U_v = 0$ to 10 V
Measurement error	< 0,6 %	< 0,6 %
Load resistance	$R_z < (U_{cc} - 11) \times 50 [\Omega]$	$R_z > 50 \text{ k}\Omega$
Sensing element break	$I_z > 24 \text{ mA}$	$U_v > 12 \text{ V}$
Sensing element short	$I_z < 3 \text{ mA}$	$U_v \sim 0 \text{ V}$
Ambient temperature	-30 to 80°C	-30 to 80°C
Relative humidity	< 80 %	< 80 %
Degree of protection	IP 65	IP 65
Response velocity time $\tau_{03}$ for P16x	< 8 s	< 8 s
Recommendet diameter of connecting cable	0,35 to 2mm <sup>2</sup>	0,35 to 2mm <sup>2</sup>

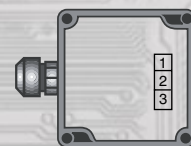
1) In case of P10I and P10U type is degree of protection IP30

Wiring diagram for P1xI



1,2: current loop arbitrary polarity

Wiring diagram for P1xU



1: positive pole of the supply source  
 2: negative pole of the supply source  
 3: 0 to 10 V output

### Technical description, execution

**P10I T1/T2, P10U T1/T2**  
**P11I T1/T2, P11U T1/T2**

- transducers for temperature measuring in interior applications.
- transducers are designed for temperature measuring of outdoor air. They are provided with a plastics console for attaching to a wall; the actual sensing element is positioned in a stainless steel stem of 25mm length; the terminal board for connecting is positioned in a plastics head.

**P12I-L1 T1/T2, P12U-L1 T1/T2**

- transducer execution for mounting into air conditioning ducts. With the exception of the console, the execution is identical with P11x; L1 denotes the shank length specified in millimeters, for example P12I-120 is a conventional transducer with stem length of 120 mm.

**P13I-L2 T1/T2, P13U-L2 T1/T2**

- the transducers are designed for measuring operations in pipelines. As an accessory, a part of the transducer is a stainless steel well fitted with a thread G 1/2: of length L2 mm, which was tested for pressure of 4,0 MPa.

**P14I T1/T2, P14U T1/T2**

- affixed execution of the transducers.

**P16I-L3 T1/T2, P16U-L3 T1/T2**

- quick-response type of transducers: stem length L3 = 100 or 160 mm.

### Method of ordering

State the quantity of pieces and the transducer type in the order.

An example of an order:

**5 pieces transducer P131-100 0/150**



### Mounting the transducers

#### Transducers for outdoor air, into the ducts and into pipelines

Screw out the small screws and remove the head cover, then connect the lead-in cable of the recommended cross section from 0,35 to 2 mm<sup>2</sup> and of outer diameter 4 to 8 mm to the terminal board through the bushing. Once the cover is replaced onto the head and the small screws screwed in, the mounting is terminated and the transducer is ready for operation.

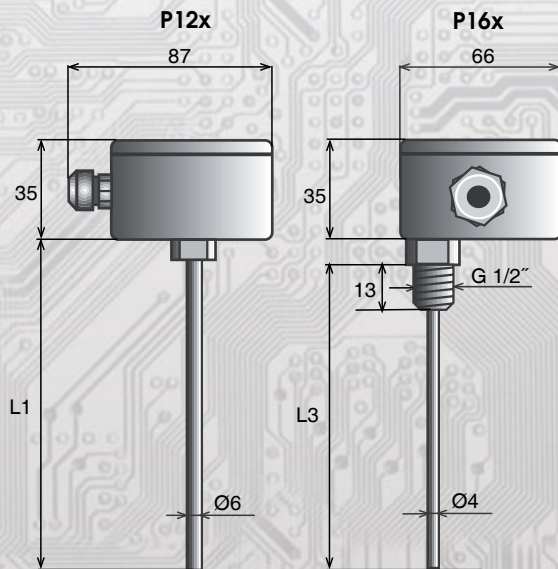
#### Wall mount

Hinge open the perforated cover and pass the lead-in cable through the hole in the base, connecting the individual leading wires to the terminal board as well. Using two wood screws, fasten the base onto a wall, inserting them into hole in the opposite corners of the base. Snap the cover into the base, whereupon the transducer is ready for operation.

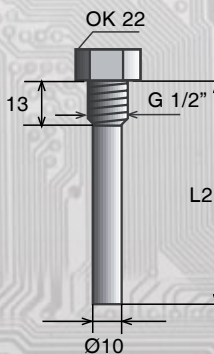
#### Strap Mount

Fasten the transducer onto the pipeline, using a tape, and having removed the cover, connect the lead-in cable of recommended cross section from 0,35 to 2 mm<sup>2</sup> and of outer diameter 4 to 8 mm to the terminal board through the bushing. Replace the cover onto the head and screw in the small screws, whereupon the mounting is terminated and the transducer is ready for operation.

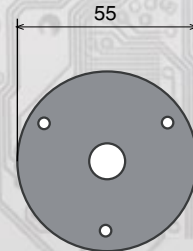
### Dimensions and accessories



#### Thermowell

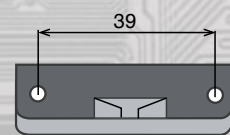


#### Central holder A - for P12x



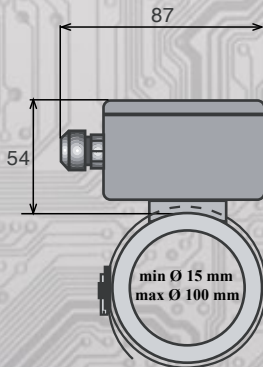
3 holes of 4,5 mm diameter

#### Side holder A - for P11x



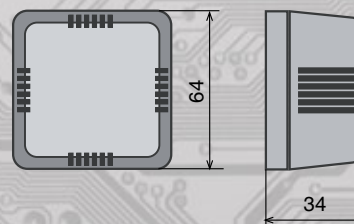
2 holes of 4,5 mm diameter

#### Strap - Mount with a head - P14x



Maximum temperature of the surface measured  
 $t_p < 120^\circ\text{C}$

#### Wall Mount - P10x



- Remark:
- 1) Subject of an order, also non-standart lengths and transducer temperature ranges, or other types of the thermowell threads, for example M20 x 1,5 may be delivered.
  - 2) For the range of 0 to 250 °C, transducer with an increased stem length by 60 mm are delivered.