

PRODUCT DESCRIPTION

Transmitters and transducers with 4 - 20 mA output are designed to measure ambient temperature, to measure temperature in duct and to conversion signals from Pt1000 or Pt100 sensors to current..

Durable plastic case from ABS contains electronic and connection terminals.

type *	construction	mounting	external probe connection
P0120	ambient air	wall	
P0132	duct mount	insert to thermowell	
P41x1	external probe Pt1000/3850 ppm	wall	2- wire
P6181	external probe Pt100/3850 ppm	wall	2- wire, 3- wire, 2- wire with compensation loop

^{*} models marked PxxxxZ are custom - specified devices

INSTALLATION AND OPERATION

The transmitters and transducers designed for mounting on the wall are mounted on a flat surface with two screws or bolts. The stem of P0132 transmitter insert into the stainless steel thermowell (thermowell is not included). Pay attention to device mounting, because incorrect choice of working position or measuring point could adversely affect accuracy and long-term stability of measured values.

The connecting terminals are accessible after unscrewing the four screws in the corners of the case and removing the lid. Pass the current loop cable (maximal length 1200 m) through released upper gland and connect the wires according to diagram. The cable of external probe Pt1000 (Pt100) pass through released lower gland, pass it under the display and connect according to diagram too. Tighten glands and screw the lid.

External temperature probe Pt1000 of P41x1 transducer is connected by two wire shielded cable with length up to 10 m.

Connection of external temperature probe Pt100 (P6181 transducer) is enabled by three ways:

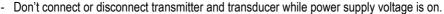
- 1. Two-wire connection suitable for short probes (approximately to 1m).
- 2. Three-wire connection used for longer probe leads. This wiring compensates parasite resistance of connected probe leads and its temperature dependence.
- 3. Two-wire connection with compensation loop similar to three-wire connection but there are 4 wires connected to the cable.

The shielding of the probe cable connect **only** to proper terminal of the device and do not connect it to any other circuitry and **do not** ground it.

For current loop and external probe connection it is recommended to use shielded cable (external diameter 4 to 8 mm) with wire cross-section 0.14 to 1.5 mm².

Devices don't require special operation and maintenance. We recommend you periodic calibration for measurement accuracy validation.

SAFETY INSTRUCTIONS





- Installation, electrical connection and commissioning should be performed by qualified personnel only.
- Devices contain electronic components, it needs to liquidate them according to currently valid conditions.
- For more information, please use detailed manuals and other documentation which are available at www.cometsystem.cz/manuals.htm or www.cometsystem.cz/software.htm

Technical specifications

Device type		P4121 až P4191	P6181	P0120	P0132
Supply voltage		9 to 30V	9 to 30V	9 to 30V	9 to 30V
Output in case of error		< 3.5mA or > 24mA	< 3.5mA or > 24mA	< 3.5mA or > 24mA	< 3.5mA or > 24mA
Temperature measuring range		see Table	-100 to +200°C	-30 to +80°C	0 to +150°C
Accuracy of temperature measurement		see Table **	± 0.3°C (up to 100°C) ** ± 0.4°C (over 100°C) **	± 0.4°C	± 0.4°C (up to 100°C) 0.4% FR* (over 100°C)
Response time t63		depends on connected temperature probe	depends on probe	< 2min ***	< 45s ****
Response time t90		depends on connected temperature probe	depends on probe	< 4min ***	I
Recomended calibration interval		2 years	2 years	2 years	2 years
Protection class of the case with elektronics		IP65	IP65	IP65	IP65
Temperature operating range of the case with electronics		-30 to +80°C	-30 to +80°C	-30 to +80°C	-30 to +80°C
Humidity operating range		U to 100%KH	HX%OOL OLO	HY%001.01.0	HX%,001 01 0
Mounting position Storage temperature range (environment without condensation)		any position -30 to +80°C	any position -30 to +80°C	cable gland upwards	any position -30 to +80°C
Electromagnetic compatibility according to		EN 61326-1	EN 61326-1	EN 61326-1	EN 61326-1
Weight Dimensions [mm]		125 g	125 g	140 g	140 g
Electrical wiring					
	Housing dimonsions	(a)	(e) Comet	(A)	
4 - 20 mA analog output			1		
<u></u>	40	0	Φ	0	
			> €	> €	
Rmax[Ω] = 50*Uss[V] - 450				Ø18	150
£2	G6)			23 	9
PA4x1 - external probe P41000 wiring	•	external probe	external probe		
	76.5	Pt1000/3850ppm	Pt100/3850ppm		
	89. 44.2				(P)
<u>→</u>		ng Accuracy			191
		range			
		-30 to +80°C ±0.3°C			
P6181 - external probe Pt100 wiring		100 to +150°C ±0.3°C			(()
		P4 4 -100 t0 +50 t = ±0.3 t 1=0.125×1-132.3			
		0 to +350°C ±0.4°C		F	F
		0 to +400°C ±0.7°C		calculation [°C,mA]	calculation [°C,mA]
		±0.3°C		T=6.875×I-57.5	T=9.375×I-37.5
2 - wire 3 - wire 2-wire with closed loop					
* FR from reading ** accuracy of device without temperature probe		****	*** temperature step from +25°C to +80°C, airflow approximately 1 m/s **** temperature step from 0°C to +100°C, stem with well immersed to fluid, flow velocity 1 m/s	ature step from +25°C to +80° -100°C, stem with well immer	C, airflow approximately 1 m/s sed to fluid, flow velocity 1 m/s

* FR from reading
 ** accuracy of device without temperature probe