

# TRANSDUCER SUPPLIED FROM A CURRENT LOOP

## P15 TYPE



### APPLICATION

The P15 transducer supplied from a current loop converts the signal from temperature sensor or the voltage standard signal into a 4...20 mA current signal.

Working in such a configuration, the transducer acts as an active load and the consumed current by this load is proportional to the signal change measured on the transducer input.

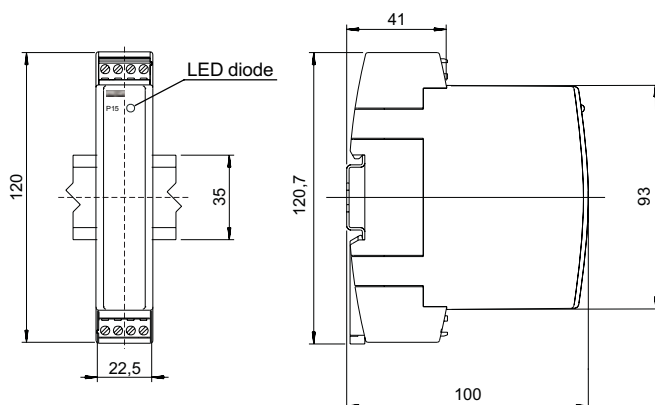


Fig.1. Transducer overall dimensions and fixing way.

### TECHNICAL DATA

#### Basic parameters:

- conversion error	± 0.5% of the range
- additional error from ambient temperature changes	± (0.2 % of the range/10K)
- conversion time	1 s
- supply voltage (U)	19...30 V d.c. (for $R_{load} \leq 500 \Omega$ )
- power consumption	< 0.7 VA
- transducer preheating time	15 min.
- ambient temperature	-20...23...55°C
- storage temperature	-25...+85°C
- relative air humidity	< 95% (inadmissible condensation)
- operating position	any
- sustained overload	1% (TC and RTD) 20% (voltage and resistance)
- momentary overload (3 s)	30 V (inputs of sensors and voltage)
- ensured protection degree	IP 50 (housing) IP 20 (electrical connections)
- dimensions	22.5 x 100 x 120 mm
- weight	110 g
- fixing	on a 35 mm rail, acc.to EN 607715
<b>Input:</b>	
- type and input range	acc. to version codes
- input resistance	> 1 MΩ for the version P15-00XXX > 9 MΩ for remaining versions
- current flowing through RTD	< 400 μA
- resistance of wires connecting RTD with the transducer	≤ 10 Ω/wire
- TC characteristics	acc. to EN 60584 -1
- RTD characteristics	acc. to EN 60751 +A2

#### Output:

- range of analog output (I)	4...20 mA
- output resolution	0.005 mA
- output load ( $R_{load}$ )	< 500 Ω

#### Electromagnetic compatibility:

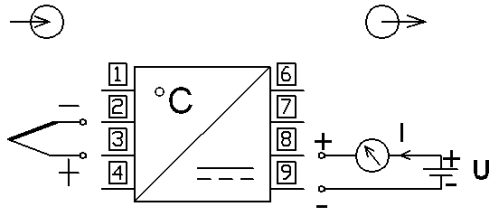
- noise immunity	acc. to EN 61000-6-2
- noise emissions	acc. to EN 61000-6-4

#### Safety requirements acc. to EN 61010-1

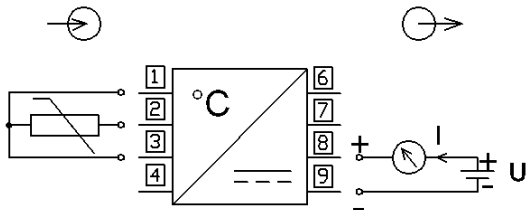
- installation category	III
- pollution degree	2
- phase-to-earth working voltage	50V

## EXTERNAL CONNECTIONS

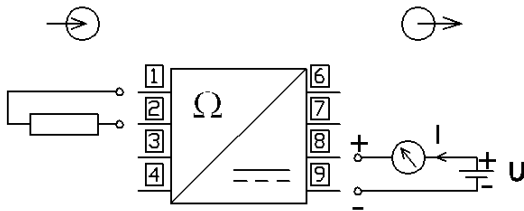
### Thermocouple



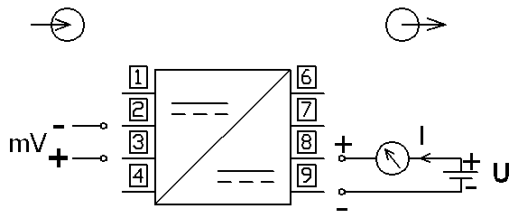
### Resistance thermometer in a three-wire system



### Resistance measurement in a two-wire system



### Voltage: 0...60 mV



### Voltage: 0...10 V

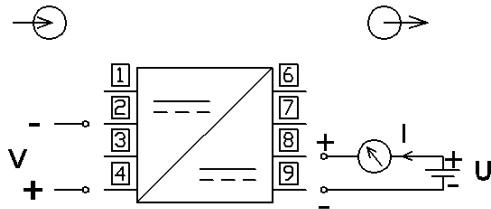


Fig.2. Connection of external signals.

In case when the transducer operates in an environment of high interference, one must apply shielded wires.

## ORDER CODES

Version codes of the P15 transducer

Transducer supplied from a current loop P15 -	XX	XX	X
<b>Input signal:</b>			
Voltage	(0 ... 10) V	.....	00
Thermocouple J	(-100 ... +1200) °C	.....	01
Thermocouple K	(-100 ... +1370) °C	.....	02
Thermocouple N	(-100 ... +1300) °C	.....	03
Thermocouple E	(-100 ... +900) °C	.....	04
Resistance thermometer Pt100	(-50 ... 100) °C	.....	05
Resistance thermometer Pt100	(-50 ... 400) °C	.....	06
Resistance	(0 ... 150) Ω	.....	07
Resistance	(0 ... 250) Ω	.....	08
Voltage	(0 ... 60) mV	.....	09
<b>Kind of version:</b>			
Standard	.....	.....	00
On order*	.....	.....	XX
<b>Acceptance tests:</b>			
Without additional requirements	.....	.....	8
With a quality inspection certificate	.....	.....	7
Acc. to customer's agreement*	.....	.....	X

\* after agreement with the manufacturer

### ORDERING EXAMPLE:

The code: **P15-05.00.8**  
means a transducer version supplied from a current loop,  
**05** - Input signal: Pt100 RTD, (-50...100°C) range  
**00** - Standard option  
**8** - Without additional quality inspection requirements