NEW TRANSDUCER OF TEMPERATURE AND STANDARD SIGNALS
P20 TYPE

APPLICATION

The P20 programmable transducer is destined to convert the temperature, resistance, voltage from shunt and standard signals into a constant-current or constant-voltage standard signal. The output signal is galvanically isolated from the input signal and the supply. The transducer compensates automatically the resistance of wires in case of the resistance value measurement in a three-wire system and automatically compensates the temperature of terminals in case of measurements from thermocouples. The transducer is fully configurable through the PD14 programmer. By means of this programmer one can change the input type, the averaging time of the measurement and rescale the analog output acc. to the individual output characteristic, and also read out the measured value.

TECHNICAL DATA

Basic parameters:
- analog output galvanically isolated: 0/4... 20 mA
- current 0...10 V
- load resistance of the current output \( \leq 500 \ \Omega \)
- load resistance of the voltage output \( \geq 500 \ \Omega \)
- accuracy class \(^1\) 0.2
- averaging time of the transducer:
  - range: d.c. current [mA], d.c. voltage [V] \( \geq 0.1 \ \text{s} \)
  - other ranges \( \geq 0.3 \ \text{s} \)
- power consumption \(< 3 \ \text{VA} \)
- preheating time of the transducer 10 min
- response time of the transducer:
  - range: d.c. current [mA], d.c. voltage [V] \( \geq 0.2 \ \text{s} \)
  - other ranges \( \geq 0.4 \ \text{s} \)
- current flowing through RTD \(< 0.2 \ \text{mA} \)
- resistance of wires connecting RTD with the transducer \( \leq 10 \ \Omega \)

Rated operating conditions:
- supply depending on the execution code
  - range: d.c. current [mA], d.c. voltage [V]
    - 85... 253 V a.c./d.c.
    - 20... 40 V a.c./d.c.
- frequency of the supply a.c. voltage 45... 65 Hz
- ambient temperature -20... 23...55°C
- storage temperature 25...85°C
- related air humidity < 95% (condensation inadmissible)
- working position any

Input parameters:
- resistance of voltage input [V] \( > 1 \ \text{M} \ \Omega \)
- resistance of current input [mA] \( 12 \ \text{W} \ \pm 1\%

Sustained overload:
- TC and RTD \( 1.1 \cdot X_n \)
- voltage, current and resistance \( 1.3 \cdot X_n \)

Short duration overload:
- input voltage \( 5 \cdot U_n \)
- current input \( 10 \cdot I_n \)

Ensured protection level acc. to EN 60529:
- housing IP 40
- electrical connections IP 20

Weight 0.125 kg

Dimensions 22.5 \( \times \) 120 \( \times \) 100 mm

Fitting on a 35 mm rail holder

Electromagnetic compatibility:
- noise immunity acc. to EN 61000-6-2
- noise emission acc. to EN 61000-6-4

Safety requirements acc. to EN 61010-1:
- installation category III,
- level of pollution 2,
- phase-to-earth working voltage:
  - supply 300 V \(^2\)
  - input 50 V
  - output 50 V
- altitude above sea level \(< 2000 \ \text{m} \)

\(^1\) A part of sub-ranges for thermocouples and RTD has a specified individual class (see table 1)

\(^2\) Execution for supply voltage 230 V
DIAGRAMS OF EXTERNAL CONNECTIONS

EXAMPLE OF ORDER:

When ordering, please respect successive code numbers.
The code P20 - 1 1 04 00 7 means:

- P20 - transducer of temperature and standard signals
- 1 - with current analog output: 0... 20 mA
- 1 - voltage supply 85...253 V a.c./d.c.
- 04 - Pt100 output signal on the 0...400°C range
- 00 - standard execution
- 7 - with an extra quality inspection certificate