



2-wire programmable transmitter

5331D

- RTD, TC, Ohm, or mV input
- Extremely high measurement accuracy
- 1.5 kVAC galvanic isolation
- Programmable sensor error value
- For DIN form B sensor head mounting



Application

- Linearized temperature measurement with Pt100...Pt1000, Ni100...Ni1000, or TC sensor.
- Conversion of linear resistance variation to a standard analog current signal, for instance from valves or Ohmic level sensors.
- Amplification of a bipolar mV signal to a standard 4...20 mA current signal.

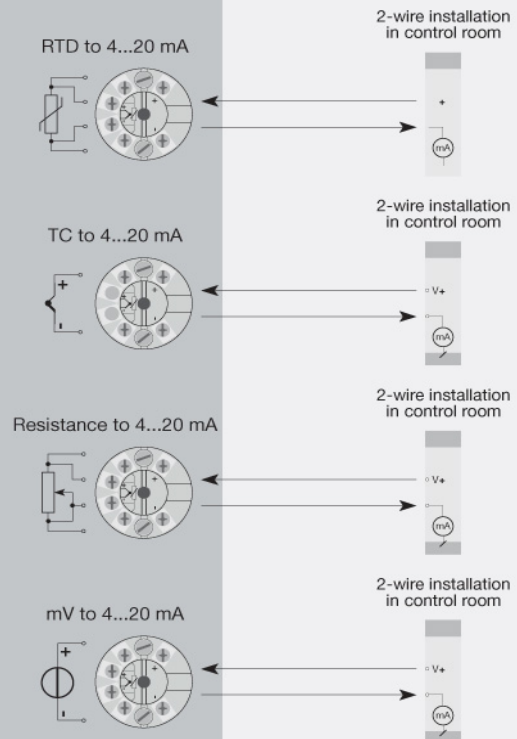
Technical characteristics

- Within a few seconds the user can program PR5331D to measure temperatures within all ranges defined by the norms.
- The RTD and resistance inputs have cable compensation for 2-, 3- and 4-wire connection.
- Continuous check of vital stored data for safety reasons.

Mounting / installation

- For DIN form B sensor head mounting.
- NB: As Ex barrier we recommend 5104B, 5114B, or 5116B.

Connections



Order:

Type	Ambient temperature	Galvanic isolation
5331D	-40°C...+85°C : 3	1500 VAC : B

Environmental Conditions

Specifications range.....	-40°C to +85°C
Calibration temperature.....	20...28°C
Relative humidity.....	< 95% RH (non-cond.)
Protection degree (encl./terminal).....	IP68 / IP00

Mechanical specifications

Dimensions.....	Ø 44 x 20.2 mm
Weight approx.....	50 g
Wire size.....	1 x 1.5 mm ² stranded wire
Screw terminal torque.....	0.4 Nm
Vibration.....	IEC 60068-2-6 : 2007
Vibration: 2...25 Hz.....	±1.6 mm
Vibration: 25...100 Hz.....	±4 g

Common specifications

Supply voltage.....	7.2...30 VDC
Internal consumption.....	25 mW...0.8 W
Voltage drop.....	7.2 VDC
Isolation voltage, test / working.....	1.5 kVAC / 50 VAC
Warm-up time.....	5 min.
Communications interface.....	Loop Link
Signal / noise ratio.....	Min. 60 dB
Response time (programmable).....	1...60 s
EEPROM error check.....	< 3.5 s
Accuracy.....	Better than 0.05% of selected range
Signal dynamics, input.....	20 bit
Signal dynamics, output.....	16 bit
Effect of supply voltage change.....	< 0.005% of span / VDC
EMC immunity influence.....	< ±0.5% of span
Extended EMC immunity: NAMUR NE 21, A criterion, burst.....	< ±1% of span

Input specifications

Max. offset.....	50% of selected max. value
RTD input.....	Pt100, Ni100, lin. R
Cable resistance per wire (max.), RTD.....	5 Ω
Sensor current, RTD.....	Nom. 0.2 mA
Effect of sensor cable resistance (3-/4-wire), RTD.....	< 0.002 Ω / Ω
Sensor error detection, RTD.....	Yes
TC input: Thermocouple type.....	B, E, J, K, L, N, R, S, T, U, W3, W5, LR
Cold junction compensation (CJC).....	< ±1.0°C
Sensor error detection, TC.....	Yes
Sensor error current: When detecting / else.....	Nom. 33 μA / 0 μA
Voltage input: Measurement range.....	-12...800 mV
Min. measurement range (span), voltage input.....	5 mV
Input resistance, voltage input.....	10 MΩ

Output specifications

Current output: Signal range.....	4...20 mA
Min. signal range.....	16 mA
Updating time.....	440 ms
Load resistance, current output.....	≤ (Vsupply - 7.2) / 0.023 [Ω]
Load stability, current output.....	≤0.01% of span/100 Ω
Sensor error indication, current output.....	Programmable 3.5...23 mA
NAMUR NE 43 Upscale/Downscale.....	23 mA / 3.5 mA
*of span.....	= of the presently selected range

Approvals

EMC.....	EN 61326-1
ATEX.....	KEMA 06ATEX0062
IECEX.....	DEK 13.0035X
FM.....	2D5A7
CSA.....	1125003
INMETRO.....	DEKRA 13.0001 X
GOST R.....	Yes
GOST Ex.....	Yes
DNV Marine.....	Stand. f. Certific. No. 2.4