

2-wire programmable transmitter

6331B

- RTD, TC, Ohm, or mV input
- Extremely high measurement accuracy
- Galvanic isolation
- Can be installed in Ex zone 0
- 1- or 2-channel version



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.

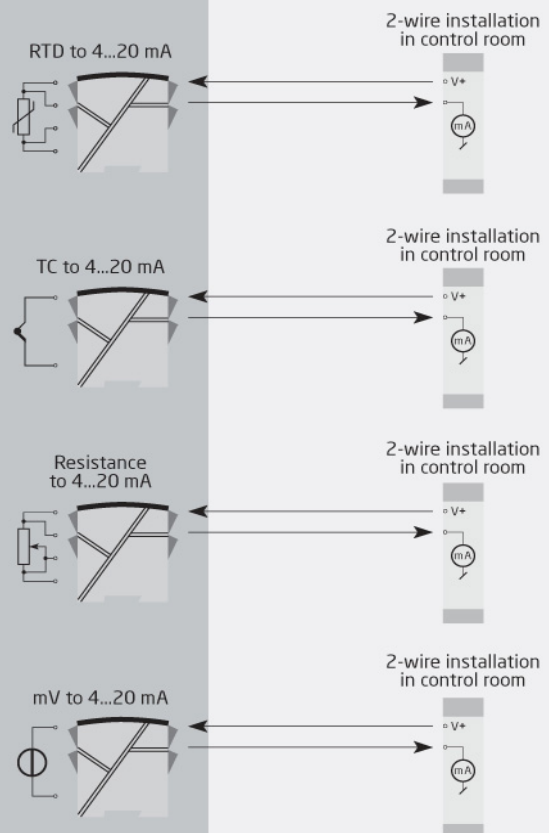
Technical characteristics

- Within a few seconds the user can program PR6331B 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.
- A limit can be programmed on the output signal.
- Continuous check of vital stored data for safety reasons.

Mounting / installation

- Mounted vertically or horizontally on a DIN rail. Using the 2-channel version, up to 84 channels can be mounted per meter.

Applications



Order:

| Type | Galvanic isolation | Channels |
|-------|--------------------|--------------------------|
| 6331B | 1500 VAC : 2 | Single : A Double : B |

*NB! Please remember to order CJC connectors type 5910Ex (channel 1) and 5913Ex (channel 2) for TC inputs with an internal CJC.

Environmental Conditions

| | |
|------------------------------|----------------------|
| Operating temperature..... | -40°C to +85°C |
| Storage temperature..... | -40°C to +85°C |
| Calibration temperature..... | 20...28°C |
| Relative humidity..... | < 95% RH (non-cond.) |
| Protection degree..... | IP20 |

Mechanical specifications

| | |
|------------------------------|--|
| Dimensions (HxWxD)..... | 109 x 23.5 x 104 mm |
| Weight (1 / 2 channels)..... | 145 / 185 g |
| DIN rail type..... | DIN EN 60715/35 mm |
| Wire size..... | 0.13...2.08 mm ² AWG 26...14 stranded wire |
| Screw terminal torque..... | 0.5 Nm |

Common specifications**Supply**

| | |
|-------------------------------------|--------------|
| Supply voltage..... | 7.2...30 VDC |
| Power dissipation, per channel..... | 0.17...0.8 W |

Isolation voltage

| | |
|--|-------------------|
| Isolation voltage, test / working..... | 1.5 kVAC / 50 VAC |
|--|-------------------|

Response time

| | |
|---|-------------------------------------|
| Response time (programmable)..... | 1...60 s |
| Voltage drop..... | 7.2 VDC |
| Warm-up time..... | 5 min. |
| Programming..... | Loop Link |
| Signal / noise ratio..... | Min. 60 dB |
| Accuracy..... | Better than 0.05% of selected range |
| EEProm error check..... | < 3.5 s |
| 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**Common input specifications**

| | |
|------------------|----------------------------|
| Max. offset..... | 50% of selected max. value |
|------------------|----------------------------|

RTD input

| | |
|--|----------------------|
| RTD type..... | Pt100, Ni100, lin. R |
| Cable resistance per wire (max.)..... | 5 Ω |
| Sensor current..... | Nom. 0.2 mA |
| Effect of sensor cable resistance (3-/4-wire)..... | < 0.002 Ω / Ω |
| Sensor error detection..... | 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..... | Yes |
| Sensor error current: When detecting / else..... | Nom. 33 μA / 0 μA |

Linear resistance input

| | |
|----------------------------------|--------------|
| Linear resistance min...max..... | 0 Ω...5000 Ω |
|----------------------------------|--------------|

Voltage input

| | |
|------------------------------------|--------------|
| Measurement range..... | -12...800 mV |
| Min. measurement range (span)..... | 5 mV |
| Input resistance..... | 10 MΩ |

Output specifications**Current output**

| | |
|------------------------------------|-------------------------------|
| Signal range..... | 4...20 mA |
| Min. signal range..... | 16 mA |
| Load (@ current output)..... | ≤ (Vsupply - 7.2) / 0.023 [Ω] |
| Load stability..... | ≤ 0.01% of span / 100 Ω |
| Sensor error indication..... | Programmable 3.5...23 mA |
| NAMUR NE 43 Upscale/Downscale..... | 23 mA / 3.5 mA |

Common output specifications

| | |
|--------------------|-----------------------------------|
| Updating time..... | 440 ms |
| *of span..... | = of the presently selected range |

Observed authority requirements

| | |
|----------|------------|
| EMC..... | 2014/30/EU |
|----------|------------|

Approvals

| | |
|----------------------------|----------------------|
| ATEX 2014/34/EU..... | KEMA 06ATEX0115 X |
| IECEx..... | DEK 14.0047 X |
| CSA..... | 1125003 |
| FM..... | FM17US0013X |
| EAC Ex TR-CU 012/2011..... | RU C-DK.GB08.V.00410 |