

## 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.

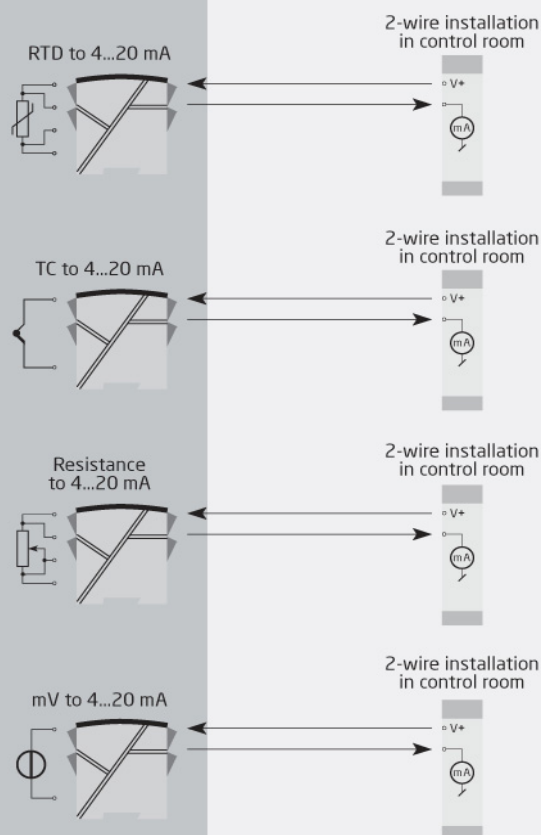
#### Technical characteristics

- 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<br>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 <sup>2</sup> AWG 26...14<br>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 NE21, 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.....                     | 5 Ω (max.)           |
| 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 NE43 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 |