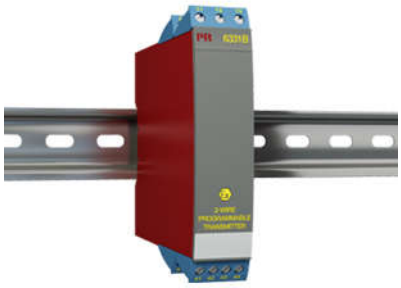
PERFORMANCE MADE SMARTER



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.

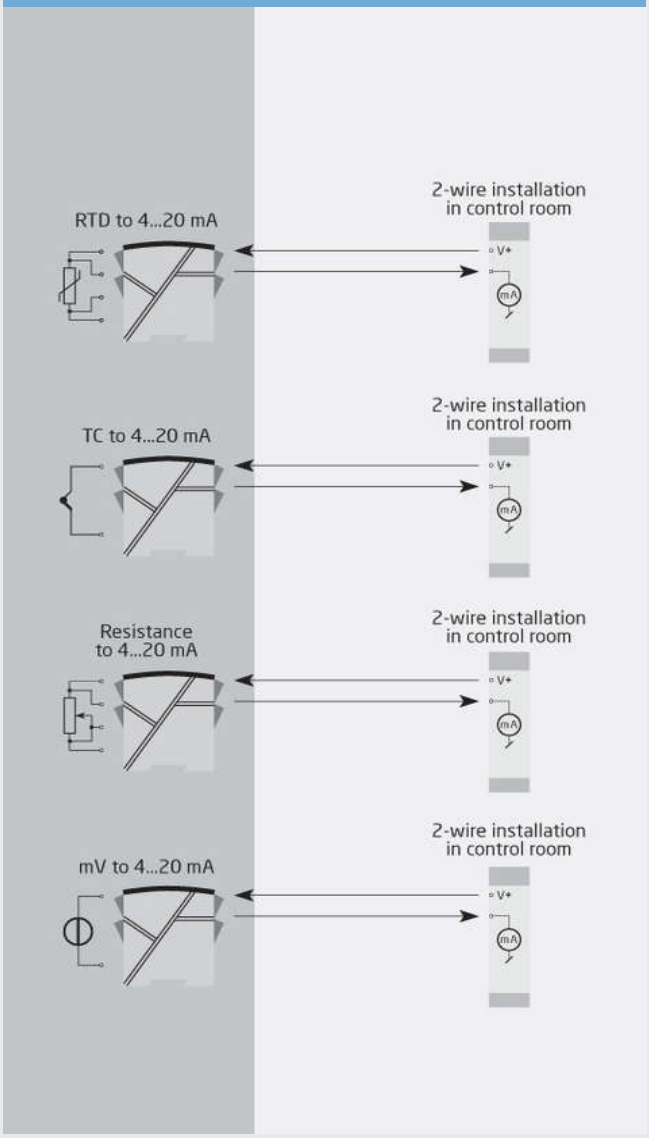
Technical characteristics

- 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.
- The 6331B can be mounted in zone 0, 1, 2 and zone 21, 22 including M1 / Class I, Division 1, Groups A, B, C, D.

Applications



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Order

Type	Version	Galvanic isolation	Channels
6331	Zone 0, 1, 2, 21, 22, M1 / DIV. 1, DIV. 2 : B	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
Max. required power..... ≤ 0.7 W/≤ 1.4 W (1 ch./2 ch.)
Power dissipation, per channel..... 0.17...0.7 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 & UK SI 2016/1091
ATEX..... 2014/34/EU & UK SI 2016/1107
RoHS..... 2011/65/EU & UK SI 2012/3032
EAC..... TR-CU 020/2011
EAC Ex..... TR-CU 012/2011

Approvals

ATEX..... DEKRA 20ATEX0095X
IECEx..... DEK 20.0059X
CSA..... 1125003
FM..... FM17US0013X
EAC Ex..... RU C-DK.HA65.B.00355/19