

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.

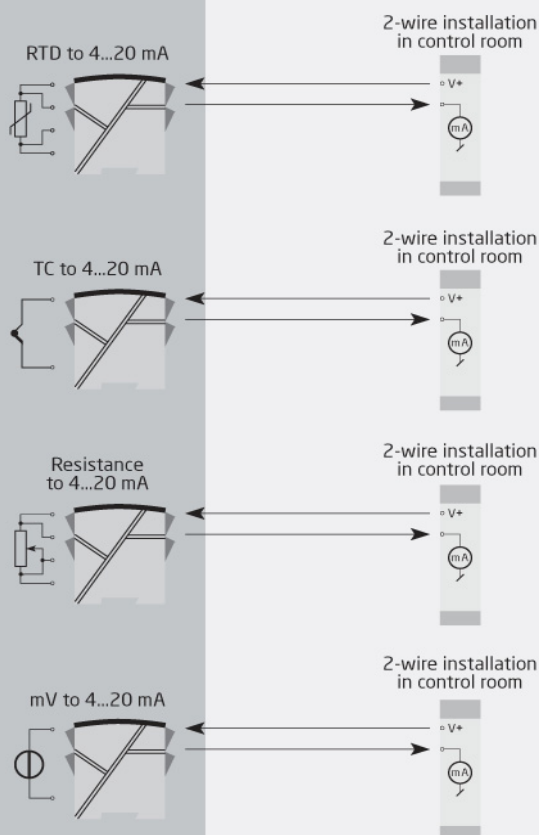
Technical characteristics

- 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



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
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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
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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
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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
INMETRO.....	DEKRA 23.0009X
EAC Ex.....	EAEU KZ 7500361.01.01.08756