

# 2-Wire Programmable Transmitter

Model 5331A

- RTD, TC, Ohm, or mV Input
- Extremely High Measurement Accuracy
- 1.5 kVAC Galvanic Isolation
- Programmable Sensor Error Value



## Application:

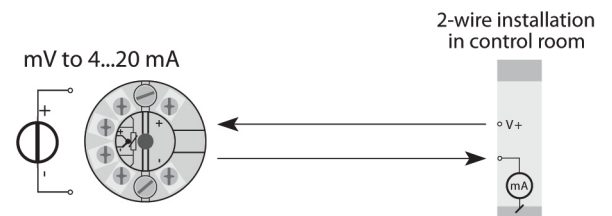
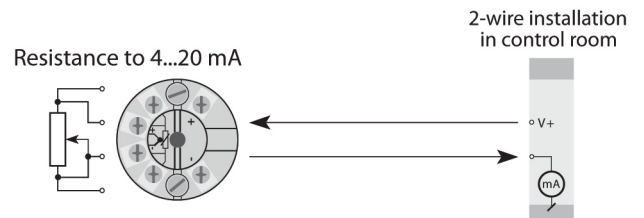
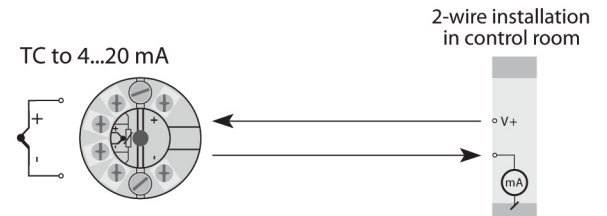
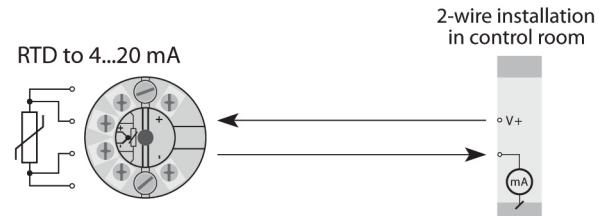
- Linearized temperature measurement with Pt100...Pt1000, Ni100...Ni1000, or TC sensor.
- Conversion of linear resistance variation to a standard analog current signal.
- Amplification of a bipolar mV signal to a standard 4...20 mA current signal.

## Technical Characteristics:

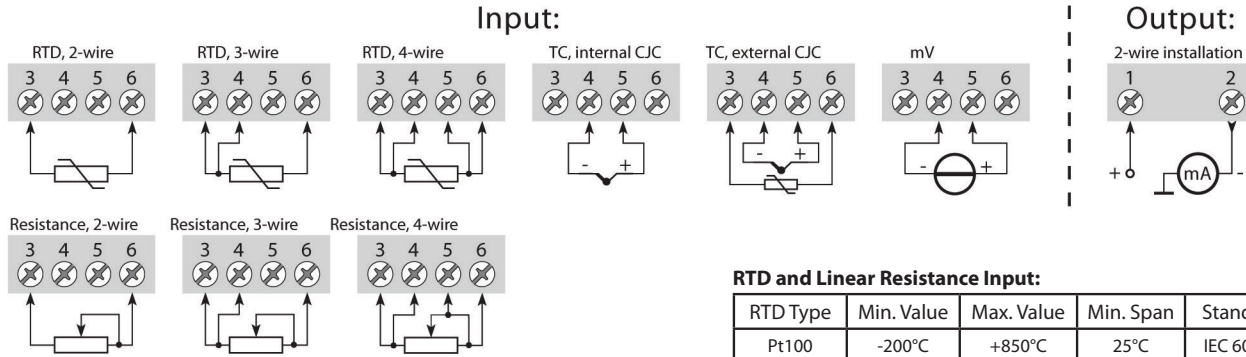
- Within seconds the user can program a 5331A to measure temperatures within all standard sensor ranges.
- The RTD and resistance inputs have cable compensation for 2-, 3- and 4-wire connection.
- Continuous check of vital stored data.

## Mounting/Installation:

- DIN Form B sensor head compatible.
- Supplied with 2 x M4 screws on a 33 mm (1.3") BC (optional 6-32 screws available).



Ideas. Solutions. Success.



Electrical Specifications

Specifications Range:

-40°C to +85°C

Common Specifications:

- Supply voltage, DC..... 7.2...35 V
- Voltage drop ..... 7.2 VDC
- Isolation voltage, test / operation ..... 1.5 kVAC / 50 VAC
- Communications interface ..... Loop Link
- Signal / noise ratio..... Min. 60 dB
- Signal dynamics, input..... 20 bit
- Signal dynamics, output..... 16 bit

Accuracy, the greater of general and basic values:

General Values		
Input Type	Absolute Accuracy	Temperature Coefficient
All	≤ ±0.05% of span	≤ ±0.01% of span / °C

Basic Values		
Input Type	Basic Accuracy	Temperature Coefficient
RTD	≤ ±0.2°C	≤ ±0.01°C/°C
Lin. R	≤ ±0.1 Ω	≤ ±10 mΩ/°C
Volt	≤ ±10 μV	≤ ±1 μV/°C
TC type: E, J, K, L, N, T, U	≤ ±1°C	≤ ±0.05°C/°C
TC type: B, R, S, W3, W5, LR	≤ ±2°C	≤ ±0.2°C/°C

EMC immunity influence ..... < ±0.5% of span
Extended EMC immunity: NAMUR NE 21, A criterion, burst ... < ±1% of span

- Vibration ..... IEC 60068-2-6 Test FC
- Lloyd's specification no. 1..... 4 g / 2...100 Hz
- Max wire size ..... 1 x 1.5mm<sup>2</sup> (16 AWG) stranded wire
- Humidity ..... < 95% RH (non-cond.)
- Dimensions ..... Ø 44 x 20.2 mm
- Protection degree (encl/terminal) ..... IP68 / IP00

Electrical Specifications, Input:

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

RTD and Linear Resistance Input:

RTD Type	Min. Value	Max. Value	Min. Span	Standard
Pt100	-200°C	+850°C	25°C	IEC 60751
Ni100	-60°C	+250°C	25°C	DIN 43760
Lin. R	0 Ω	5000 Ω	30 Ω	-----

Cable resistance per wire (max.) ..... 5Ω  
 Sensor current ..... Nom. 0.2 mA

T/C Input:

Type	Min. Temperature	Max. Temperature	Min. Span	Standard
B	+400°C	+1820°C	200°C	IEC584
E	-100°C	+1000°C	50°C	IEC584
J	-100°C	+1200°C	50°C	IEC584
K	-180°C	+1372°C	50°C	IEC584
L	-100°C	+900°C	50°C	DIN 43710
N	-180°C	+1300°C	100°C	IEC584
R	-50°C	+1760°C	200°C	IEC584
S	-50°C	+1760°C	200°C	IEC584
T	-200°C	+400°C	50°C	IEC584
U	-200°C	+600°C	75°C	DIN 43710
W3	0°C	+2300°C	200°C	ASTM E988-90
W5	0°C	+2300°C	200°C	ASTM E988-90
LR	-200°C	+800°C	50°C	GOST 3044-84

Cold junction compensation..... < ±1.0°C

Voltage Input:

Measurement range ..... -12...800 mV  
 Min. span ..... 5 mV

Current Output:

Signal range ..... 4...20 mA  
 Min. signal range..... 16 mA  
 Updating time ..... 440 ms  
 Load resistance ..... ≤ (Vsupply - 7.2) / 0.023 [Ω]

Sensor Error Detection:

Programmable ..... 3.5...23 mA

Marine Approval\*:

Det Norske Veritas, Ships & Offshore... Stand. for Certific. No. 2.4

Observed Authority Requirements: ... Standard:

EMC 2004/108/EC

Emission and immunity ..... EN 61326

Of Span = Of the presently selected range

Loop Link = PC compatible programming software.

\*The transmitter is manufactured by PR electronics. All approvals listed are recognized under the PR name.