

2-wire programmable transmitter

5131A

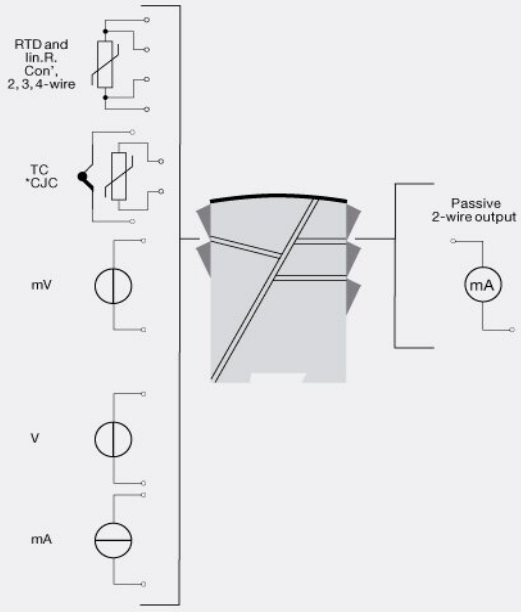
- Input for RTD, TC, mV, linear resistance, mA, and V
- 3.75 kVAC galvanic isolation
- 4...20 mA loop output
- 1- or 2-channel version
- DIN rail mounting

Advanced features
- The 5131A transmitter can be configured with the software program PReset using a standard PC and the Loop Link communications unit.

Application
- Independent channel jumper selectable inputs for current/voltage or temperature.
- Current input programmable in range 0...100 mA and voltage inputs in range 0...250 VDC.
- Linearized, electronic temperature measurement with RTD or TC sensor.
- Conversion of linear resistance variation to a standard analog current / voltage signal, for example from solenoids and butterfly valves or linear movements with attached potentiometer.
- 4- or 3-wire connection automatic cable compensation or 2-wire connection with programmable cable compensation.
- Configurable sensor error detection including NAMUR NE43.

Technical characteristics
- The 2-channel version has full galvanic isolation between the channels.
- Separation of circuits in PELV/SELV installations.

Applications



For pricing or any further information, please contact Omni Instruments Ltd.

Measurement and data acquisition solutions

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Order:

Type	Input	Channels
5131A	RTD / TC / R / mA / V / mV : -	Single : A Double : B

***Note!** For TC inputs with internal CJC, remember to order CJC connectors type 5910 (ch. 1) and 5913 (ch. 2).

Environmental Conditions

Operating temperature	-20°C to +60°C
Calibration temperature	20...28°C
Relative humidity	< 95% RH (non-cond.)
Protection degree	IP20

Mechanical specifications

Dimensions (HxWxD)	109 x 23.5 x 130 mm
Weight approx.	195 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	7.5...35 VDC
Fuse	50 mA SB / 250 VAC

Isolation voltage

Isolation voltage, test / working	3.75 kVAC / 250 VAC
PELV/SELV	IEC 61140

Response time

Temperature input, programmable (0...90%, 100...10%)	400 ms...60 s
mA / V input (programmable)	250 ms...60 s
Programming	PR 5909 Loop Link communications interface
Signal / noise ratio	Min. 60 dB (0...100 kHz)
Signal dynamics, input	22 bit
Signal dynamics, output	16 bit
Updating time	115 ms (temperature input)
Updating time	75 ms (mA / V / mV input)
EMC immunity influence	< ±0.5% of span
Extended EMC immunity: NAMUR NE21, A criterion, burst	< ±1% of span
Effect of supply voltage change	< 0.005% of span / VDC

Input specifications

Common input specifications

Max. offset	50% of selected max. value

RTD input

RTD type	Pt100…1000, Ni100...1000, lin. R
Cable resistance per wire	10 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 current	Nom. 30 µA
Sensor error detection	Yes

Current input

Measurement range	0...100 mA
Min. measurement range (span)	4 mA
Input resistance: Supplied unit	Nom. 10 Ω + PTC 10 Ω
Input resistance: Non-supplied unit	RSHUNT = ∞, VDROP < 6 V

mV input

Measurement range	-150...+150 mV

Voltage input

Measurement range	0...250 VDC
Min. measurement range (span)	5 mV
Input resistance	Nom. 10 MΩ (≤ 2.5 VDC)
Input resistance	Nom. 5 MΩ (> 2.5 VDC)

Output specifications

Current output

Signal range	4…20 mA
Min. signal range	10 mA
Load (@ current output)	≤ (Vsupply - 7.5) / 0.023 [Ω]
Load stability	≤ 0.01% of span / 100 Ω (1)
Current limit	≤ 28 mA
Sensor error indication	Programmable 3.5…23 mA
NAMUR NE43 Upscale/Downscale	23 mA / 3.5 mA
of span	= of the presently selected range

Observed authority requirements

EMC	2014/30/EU
LVD	2014/35/EU
RoHS	2011/65/EU
EAC	TR-CU 020/2011

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