

## 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.

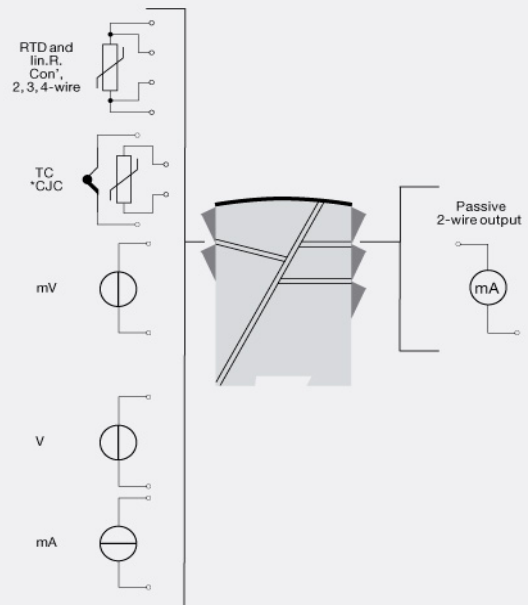
#### Application

- 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



**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 46277
Wire size.....	1 x 2.5 mm <sup>2</sup> 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.....	Loop Link
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
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**RTD input**

RTD type.....	Pt100, Ni100, 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
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**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
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

**Approvals**

ATEX 2014/34/EU.....	DEMKO 99ATEX124572, II (1) GD [EEEx ia] IIC
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