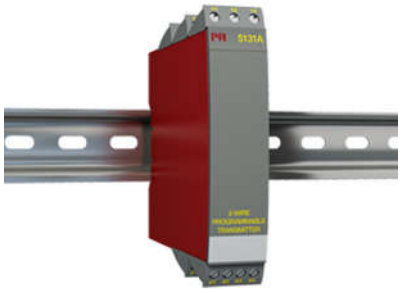
PERFORMANCE MADE SMARTER



2-wire programmable transmitter

5131A

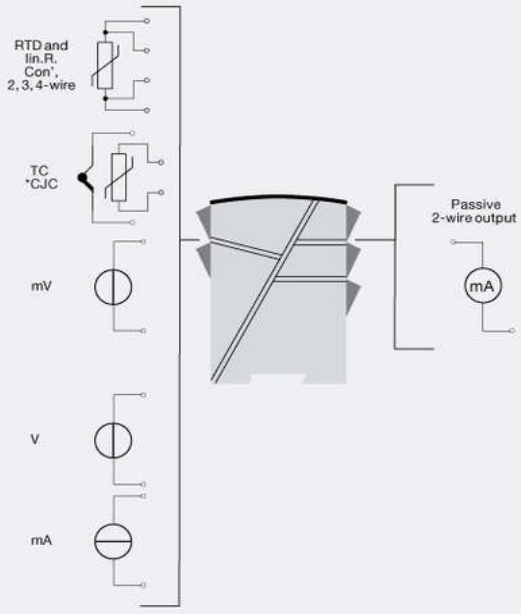
– Input for RTD, TC, mV, linear resistance, mA, and V
– 3.75 kVAC galvanic isolation
– 4...20 mA loop output
– 1- or 2-channel version
– DIN rail mounting

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



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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 46277
Wire size..... 1 x 2.5 mm^2 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

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

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 [EEx ia] IIC