

2-wire programmable transmitter

5131A

- Input for RTD, TC, mV, linear resistance, mA, and V sample
- 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.

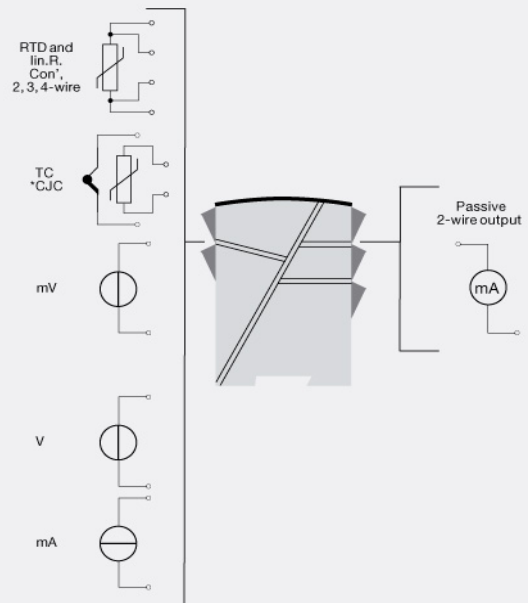
Application

- 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

- Analog current output can be configured to any current within 0...20 mA range.
- Voltage output range is selectable between 0...10 VDC.
- Programming can be performed with or without a power supply.
- The 2-channel version has full galvanic isolation between the channels.
- Separation of circuits in PELV/SELV installations.

Connections



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

| | |
|------------------------------|----------------------|
| Specifications range..... | -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 voltage..... | 7.5...35 VDC |
| Fuse..... | 50 mA SB / 250 VAC |
| Isolation voltage, test / working..... | 3.75 kVAC / 250 VAC |
| Communications interface..... | 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) |
| Response time (0...90%, 100...10%): | |
| Temperature input (programmable)..... | 400 ms...60 s |
| mA / V input (programmable)..... | 250 ms...60 s |
| EMC immunity influence..... | < ±0.5% of span |
| Extended EMC immunity: NAMUR | |
| NE 21, A criterion, burst..... | < ±1% of span |
| Effect of supply voltage change..... | < 0.005% of span / VDC |

Input specifications

| | |
|---|--|
| Max. offset..... | 50% of selected max. value |
| RTD input..... | Pt100, Ni100, lin. R |
| Cable resistance per wire (max.), RTD..... | 10 Ω |
| Sensor current, RTD..... | Nom. 0.2 mA |
| Effect of sensor cable resistance (3-/4-wire), RTD..... | < 0.002 Ω / Ω |
| Sensor error detection, RTD..... | 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, TC..... | Nom. 30 μA |
| Sensor error detection, TC..... | Yes |
| Current input: Measurement range..... | 0...100 mA |
| Min. measurement range (span), current input..... | 4 mA |
| Input resistance: Supplied unit..... | Nom. 10 Ω + PTC 10 Ω |
| Input resistance: Non-supplied unit..... | RSHUNT = ∞, VDROPP < 6 V |
| Voltage input: Measurement range..... | -150...+150 mV |
| Voltage input: Measurement range..... | 0...250 VDC |
| Min. measurement range (span), voltage input..... | 5 mV |
| Input resistance, voltage input..... | Nom. 10 MΩ (≤ 2.5 VDC) |
| Input resistance, voltage input..... | Nom. 5 MΩ (> 2.5 VDC) |

Output specifications

| | |
|---|-----------------------------------|
| Max. offset..... | 50% of selected max. value |
| Current output: Signal range..... | 4...20 mA |
| Min. signal range..... | 10 mA |
| Load resistance, current output..... | ≤ (Vsupply - 7.5)/0.023 A [Ω] |
| Load stability, current output..... | ≤ 0.01% of span/100 Ω |
| Current limit..... | ≤ 28 mA |
| Sensor error detection, current output..... | Programmable 3.5...23 mA |
| NAMUR NE 43 Upscale/Downscale..... | 23 mA / 3.5 mA |
| *of span..... | = of the presently selected range |

Approvals

| | |
|----------------|---------------------------|
| EMC..... | EN 61326-1 |
| LVD..... | EN 61010-1 |
| PELV/SELV..... | IEC 364-4-41 and EN 60742 |
| ATEX..... | DEMKO 99ATEX124572 |