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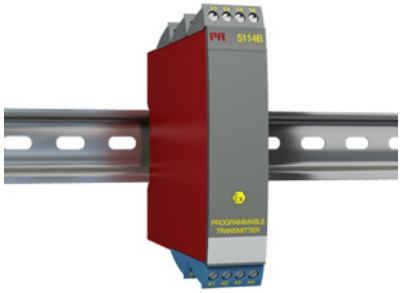
PERFORMANCE MADE SMARTER



Programmable transmitter

5114B

– Input for RTD, TC, mV, linear resistance, mA, and V
– 3-port 3.75 kVAC galvanic isolation
– Current and voltage output
– Universal voltage supply
– 1- and 2-channel versions
– Loop supply > 17.1 V in Ex / I.S. zone 0

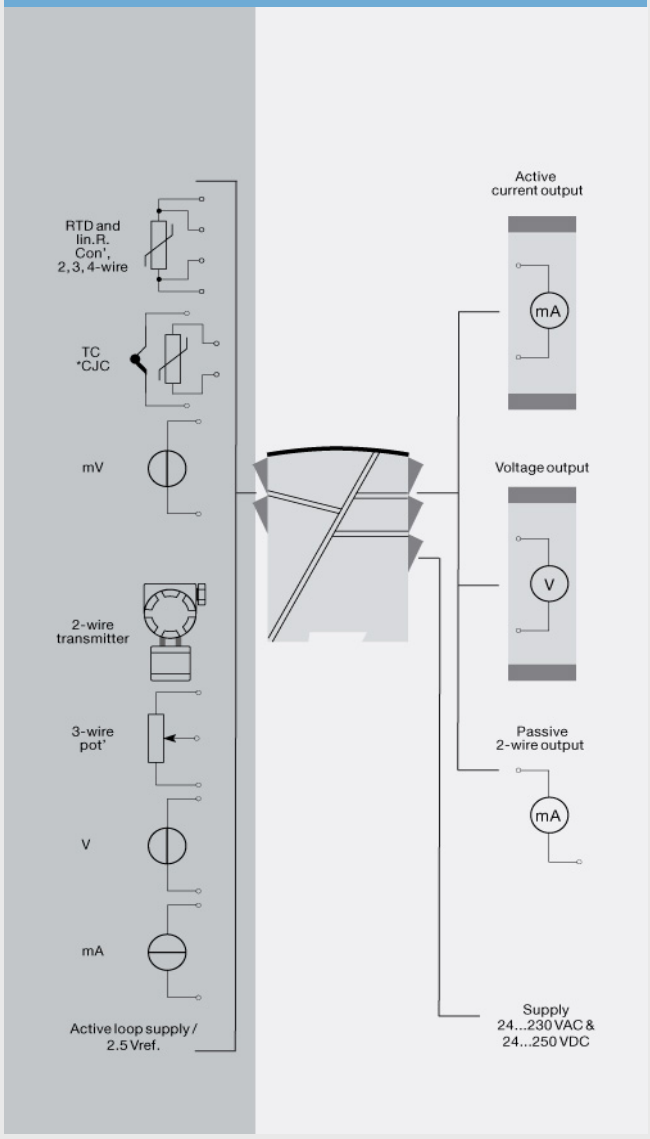
ATEX

Advanced features
- The 5114 transmitter can be configured, with or without a power supply, using the PReset software and the Loop Link communications unit.

Application
- Jumper selectable inputs for current/voltage or temperature.
- Programmable current (0...100 mA) and voltage (0...250 VDC) inputs.
- Linearized, electronic temperature measurement.
- Conversion of linear resistance variation e.g, from solenoids and butterfly valves or linear movements with attached potentiometer.
- 17.1 VDC loop and 2.5 VDC potentiometer supplies.
- Automatic 4- / 3-wire or programmable 2-wire cable compensation.
- Configurable sensor error detection including NAMUR NE43.

Technical characteristics
- Active or Passive current output and selectable voltage output.
- Separation of circuits in PELV/SELV installations.
- I.S. barrier for temperature sensors, potentiometers, and current / voltage signals.
- I.S. barrier with I.S. power supply for 2-wire transmitters in zone 0, 1, 2, 20, 21 and 2.

Connections



Order:

Type	Version	Input	Channels
5114B	ATEX Ex	RTD / TC / mV / R : 1 mA / V / mV : 2 Channel 1, RTD / TC / mV / R : 3 Channel 2, mA / V / mV	Single :A Double :B

Note! For TC inputs with internal CJC, remember to order the CJC connectors type 5910 / 5910 Ex (ch. 1) and 5913 / 5913 Ex (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..... 225 g
DIN rail type..... DIN 46277
Wire size..... 1 x 2.5 mm^2 stranded wire
Screw terminal torque..... 0.5 Nm
Vibration..... IEC 60068-2-6 : 2007
Vibration: 2...25 Hz..... ±1.6 mm
Vibration: 25...100 Hz..... ±4 g

Common specifications

Supply
Supply voltage, universal..... 21.6...253 VAC, 50...60 Hz or 19.2...300 VDC

Isolation voltage
Isolation voltage, test / working..... 3.75 kVAC / 250 VAC

Response time
Temperature input, programmable (0...90%, 100...10%)..... 400 ms...60 s
mA / V input (programmable)..... 250 ms...60 s

Auxiliary supplies
2-wire supply (pin 44...42 and 54...52)..... 28...17.1 VDC / 0...20 mA

Fuse..... 400 mA SB / 250 VAC
Max. power consumption..... ≤ 3 W (2 channels)
Internal consumption..... ≤ 2 W (2 channels)
Communications interface..... Loop Link
Signal / noise ratio..... Min. 60 dB (0...100 kHz)
Accuracy..... Better than 0.05% of selected range
Updating time..... 115 ms (temperature input)
Updating time..... 75 ms (mA / V / mV input)
Signal dynamics, input..... 22 bit
Signal dynamics, output..... 16 bit
Auxiliary voltages: Reference voltage..... 2.5 VDC ±0.5% / 15 mA
EMC immunity influence..... < ±0.5% of span
Extended EMC immunity: NAMUR NE 21, A criterion, burst..... < ±1% of span

Input specifications

Common input specifications
Max. offset..... 50% of selected max. value

RTD input
RTD type..... Pt100, Ni100, lin. R
Cable resistance per wire (max.)..... 10 Ω
Sensor current..... Nom. 0.2 mA
Effect of sensor cable resistance (3-/4-wire)..... < 0.002 Ω / Ω

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

Voltage input
Measurement range..... 0...250 VDC
Measurement range..... -150...+150 mV
Min. measurement range (span)..... 5 mV
Input resistance..... Nom. 10 MΩ (≤ 2.5 VDC)
Input resistance..... Nom. 5 MΩ (> 2.5 VDC)
Input resistance..... Nom. 10 MΩ (mV input)

Output specifications

Current output
Signal range..... 0...20 mA
Min. signal range..... 10 mA
Load (max.)..... 20 mA/600 Ω/12 VDC
Load stability..... ≤0.01% of span / 100 Ω
Current limit..... ≤ 28 mA
Sensor error indication..... Programmable 0...23 mA
NAMUR NE 43 Upscale/Downscale..... 23 mA / 3.5 mA

Voltage output
Signal range..... 0...10 VDC
Min. signal range..... 500 mV
Load (min.)..... 500 kΩ

2-wire 4...20 mA output: Signal range..... 4...20 mA
Load stability, 4…20 mA output..... ≤ 0.01% of span / 100 Ω
Max. load resistance [Ω]..... (Vsupply - 3.5) / 0.023 A
Max. external 2-wire supply..... 29 VDC
Effect of external 2-wire supply voltage variation..... < 0.005% of span / V
*of span..... = of the presently selected range

Approvals

EMC..... 2004/108/EC
LVD..... 2006/95/EC
PELV/SELV..... IEC 364-4-41 and EN 60742
ATEX 94/9/EC..... DEMKO 99ATEX124571
EAC..... TR-CU 020/2011
EAC Ex TR-CU 012/2011..... RU C-DK.GB08.V.00410
DNV Marine..... Stand. f. Certific. No. 2.4