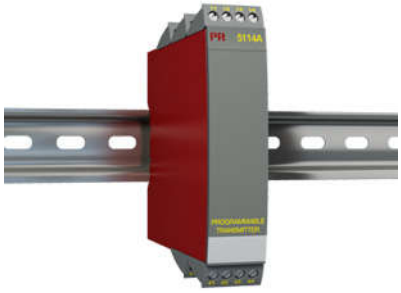
PERFORMANCE MADE SMARTER



Programmable transmitter

5114A

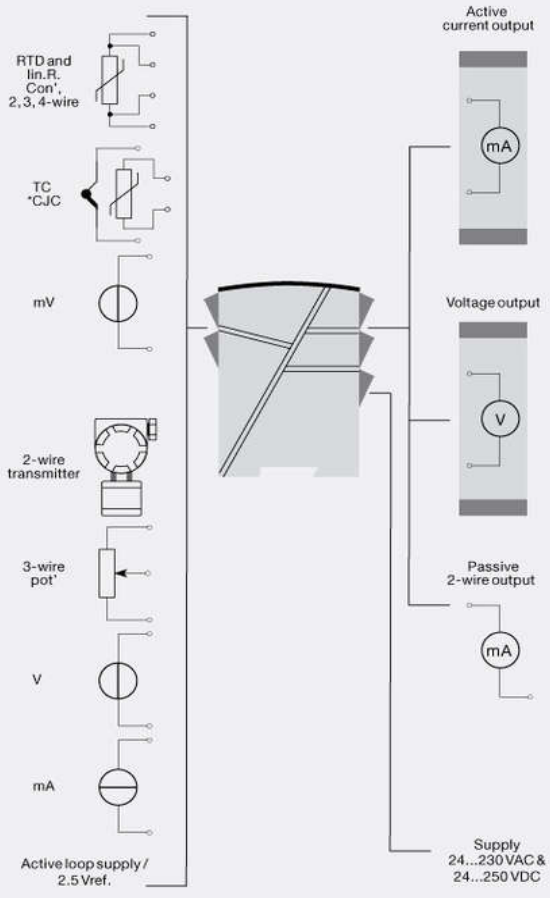
– Input for RTD, TC, mV, linear resistance, mA, and V
– 3-port 3.75 kVAC galvanic isolation
– Current and voltage output
– Universal voltage supply
– 1- and 2-channel versions
– Loop supply > 17.1 V

Advanced features
- The 5114 transmitter can be configured 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.

Applications



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Order:

Type	Version	Input	Channels
5114 A	Standard : A	RTD / TC / R / 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

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..... 225 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, universal..... 21.6...253 VAC, 50...60 Hz or 19.2...300 VDC
Fuse..... 400 mA SB / 250 VAC
Max. required power..... 2.1 W / 2.8 W (1 / 2 ch.)

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

Auxiliary supplies

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

Programming..... 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 NE21, 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..... 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

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 (@ current output)..... ≤ 600 Ω
Load stability..... ≤ 0.01% of span / 100 Ω
Current limit..... ≤ 28 mA
Sensor error indication..... Programmable 0...23 mA
NAMUR NE43 Upscale/Downscale..... 23 mA / 3.5 mA

Passive 2-wire mA output

Signal range..... 4...20 mA
Load stability..... ≤ 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

Voltage output

Signal range..... 0...10 VDC
Min. signal range..... 500 mV
Load (@ voltage output)..... ≥ 500 kΩ

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

Approvals

DNV-GL Marine..... Stand. f. Certific. No. 2.4