

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.

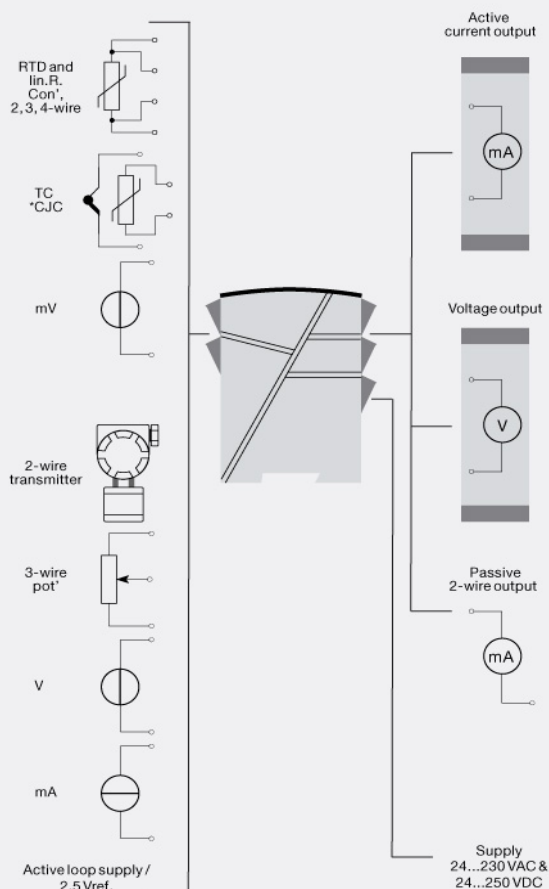
Application

- 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



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
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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 $\pm$ 0.5% / 15 mA
EMC immunity influence.....	< $\pm$ 0.5% of span
Extended EMC immunity: NAMUR NE21, A criterion, burst.....	< $\pm$ 1% of span

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).....	< $\pm$ 1.0°C
Sensor error current.....	Nom. 30 μ A
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 = ∞ , VDROD < 6 V

Voltage input

Measurement range.....	0...250 VDC
Measurement range.....	-150...+150 mV
Min. measurement range (span).....	5 mV
Input resistance.....	Nom. 10 M Ω ($\leq$ 2.5 VDC)
Input resistance.....	Nom. 5 M Ω (> 2.5 VDC)
Input resistance.....	Nom. 10 M Ω (mV input)

Output specifications**Current output**

Signal range.....	0...20 mA
Min. signal range.....	10 mA
Load (@ current output).....	$\leq$ 600 Ω
Load stability.....	$\leq$ 0.01% of span / 100 Ω
Current limit.....	$\leq$ 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.....	$\leq$ 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).....	$\geq$ 500 k Ω
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
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