

## 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, with or without a power supply, using the PReset software and the Loop Link communications unit.

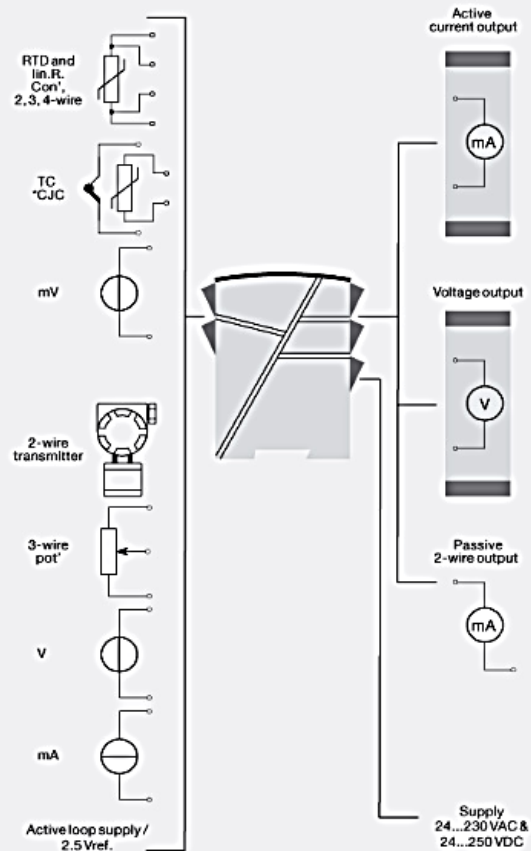
#### Application

- 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.

#### Connections



**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**

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 <sup>2</sup> stranded wire
Screw terminal torque.....	0.5 Nm

**Common specifications**

<b>Supply</b>	
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)
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
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)**

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****General approvals**

EMC.....	EN 61326-1
LVD 2006/95/EC.....	EN 61010-1
PELV/SELV.....	IEC 364-4-41 and EN 60742
EAC TR-CU 020/2011.....	EN 61326-1

**Marine approval**

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