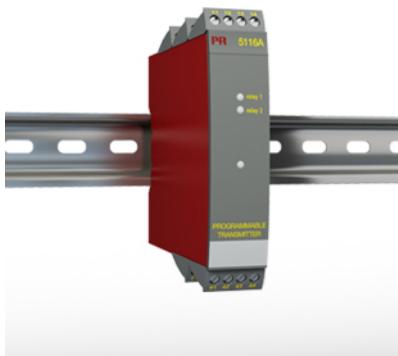


Programmable transmitter



5116A

- Input for RTD, TC, mV, Ohm, potentiometer, mA and V
- 2-wire supply > 16.5 V
- Bipolar voltage input
- Output for current, voltage and 2 relays
- Universal supply by AC or DC



Application

- Linearized, electronic temperature measurement with RTD or TC sensor.
- Conversion of linear resistance variation to a standard analog current / voltage signal, i.e. from solenoids and butterfly valves or linear movements with attached potentiometer.
- Power supply and signal isolator for 2-wire transmitters.
- Process control with 2 potential-free relay contacts which can be configured for advanced functions.
- Galvanic separation of analog signals and measurement of floating signals.

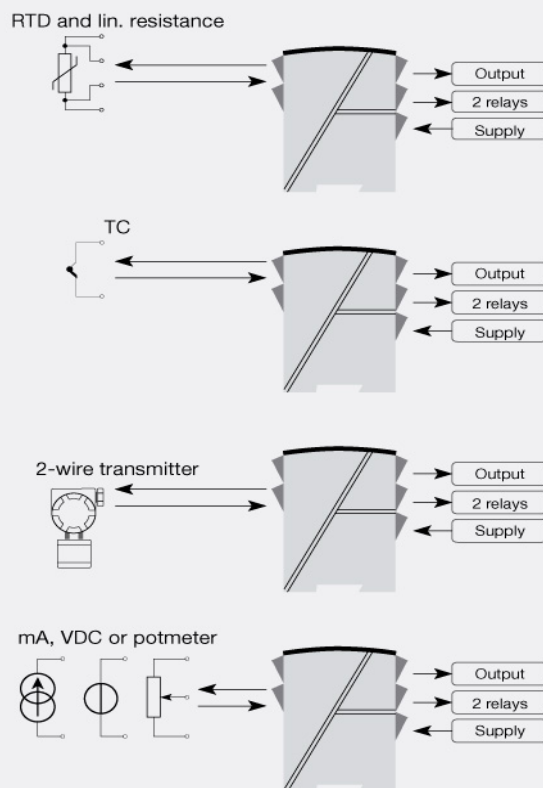
Technical characteristics

- Within a few seconds the user can program PR5116A to suit the specific application.
- By way of the front push-button the input can be calibrated to the exact span of the process. Zero drift on the process signal can be adjusted by a single press of the front button.
- A green front LED indicates normal operation and malfunction. A yellow LED is ON for each active output relay.
- Continuous check of vital stored data for safety reasons.
- 3-port 3.75 kVAC galvanic isolation.

Mounting / installation

- Mounted vertically or horizontally on a DIN rail. As the devices can be mounted without any distance between neighboring units, up to 42 devices can be mounted per meter.

Connection



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

Common specifications

Supply voltage, universal.....	21.6...253 VAC, 50...60 Hz or 19.2...300 VDC
Fuse.....	400 mA SB / 250 VAC
Max. power consumption.....	≤ 3 W
Internal consumption.....	≤ 2.0 W
Isolation voltage, test / working.....	3.75 kVAC / 250 VAC
Communications interface.....	Loop Link
Signal / noise ratio.....	Min. 60 dB (0...100 kHz)
Response time (0...90%, 100...10%): Temperature input (programmable).....	400 ms...60 s
mA / V input (programmable).....	250 ms...60 s
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
Auxiliary supplies: 2-wire supply (pin 54...52).....	28...16.5 VDC / 0...20 mA
EMC immunity influence.....	< ±0.5% of span
Extended EMC immunity: NAMUR NE 21, A criterion, burst.....	< ±1% of span

Input specifications

Max. offset.....	50% of selected max. value
RTD input.....	Pt100, Ni100, lin. R
Cable resistance per wire (max.), RTD.....	10 Ω (max. 50 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 = ∞, VDROP < 6 V
Sensor error detection, current.....	Loop break 4...20 mA
Voltage input: Measurement range.....	0...250 VDC
Voltage input: Measurement range.....	-2500...+2500 mV
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)
Input resistance, voltage input.....	> 5 MΩ (mV input)
Potentiometer via 2.5 V ref.....	170 Ω

Output specifications

Max. offset.....	50% of selected max. value
Current output: Signal range.....	0...20 mA
Min. signal range.....	10 mA
Load (max.).....	20 mA/600 Ω/12 VDC
Load stability, current output.....	≤ 0.01% of span/100 Ω
Current limit.....	≤ 28 mA
2-wire 4...20 mA output: Signal range.....	4...20 mA
Load stability, 4...20 mA output.....	≤ 0.01% of span / 100 Ω
Max. external 2-wire supply.....	29 VDC
Effect of external 2-wire supply voltage variation.....	< 0.005% of span / V
Sensor error detection, current output.....	Programmable 0...23 mA
NAMUR NE 43 Upscale/Downscale.....	23 mA / 3.5 mA
Relay output: Relay functions.....	Increasing / decreasing
Relay output: Relay functions.....	Window
Max. voltage.....	250 VRMS
Max. current.....	2 AAC
Max. AC power.....	500 VA
Max. load at 24 VDC.....	1 A
Sensor error reaction.....	Break / Make / Hold / None
*of span.....	= of the currently selected measurement range

Approvals

EMC.....	EN 61326-1
LVD.....	EN 61010-1
PELV/SELV.....	IEC 364-4-41 and EN 60742
UL.....	UL 508
GOST R.....	Yes
DNV Marine.....	Stand. f. Certific. No. 2.4