Programmable transmitter

5116B

- Input for RTD, TC, mV, Ohm, potentiometer, mA and V
- 2-wire supply > 16.5 V to Ex zone 0
- 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 PR5116B 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.
**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 (h x W x D): 109 x 23.5 x 130 mm  
Weight approx.: 235 g  
Wire size: 0.13...2.08 mm² AWG 26...14 stranded wire  
Screw terminal torque: 0.5 Nm  
Vibration range: 2...13.2 Hz - 125 ±1 mm  
13.2...100 Hz - ±0.7 mm

**Common specifications**

Supply voltage, universal: 21.6...253 VAC, 50...60 Hz or 19.2...300 VDC  
Fuse: 400 mA SB / 250 VAC  
Max. required power: 2.4 W  
Max. power dissipation: 2.0 W

Isolation voltage: 10 kΩ (max. 50 kΩ)  
Response time: 400 ms...60 s  
Accuracy: Better than 0.05% of selected range

**Input specifications**

Common input specifications: 50% of selected max. value

R:\T input
HD: 0.13...2.08 mm² AWG 26...14 stranded wire

**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  
Sensor error detection: Loop break 4...20 mA

**Voltage input**

Measurement range: 0...250 VDC  
Min. measurement range (span): 5 mA  
Input resistance: Nom. 10 MΩ (≤ 2.5 VDC)  
Input resistance: Nom. 5 MΩ (> 2.5 VDC)  
Input resistance: > 5 MΩ (mV input)

Potentiometer via 2.5 V reference: 170 Ω

**Output specifications**

Current output

Signal range: 0...20 mA  
Min. signal range: 10 mA  
Load (@ current output): ≤ 500 Ω  
Load stability: ≤ 0.01% of span / 100 Ω  
Current limit: ≤ 28 mA  
Sensor error indication: Programmable 0...23 mA  
NAMUR NE43 Up/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. 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

**Relay output**

Relay functions: Increasing / Decreasing  
Relay functions: Window  
Max. voltage: 250 VAC / VDC  
Max. current: 2 A  
Max. AC power: 500 VA  
Max. DC current, resistive load: ≤ 30 VDC  
Max. DC current, resistive load: > 30 VDC  
See manual for details  
Sensor error reaction: Break / Make / Hold / None

of span: = of the currently selected measurement range

**Observed authority requirements**

EMC: 2014/30/EU  
LVD: 2014/35/EU  
RoHS: 2011/65/EU  
EAC: TR-CU 020/2011

**Approvals**

ATEX: KEMA 04ATEX1316 X  
FM: 3023092  
UL: UL 508 / C22.2 no. 14  
EAC: RU C-DK.HA65.B.00355/19  
DNV-GL Marine: TAA0000101