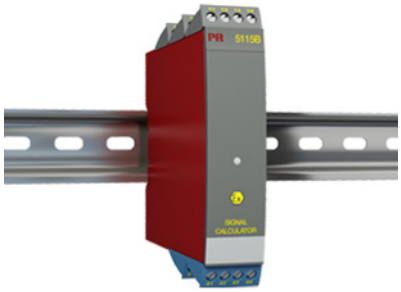
PERFORMANCE MADE SMARTER



Ex signal calculator

5115B

- Redundancy measurement with 2 input signals
- Signal calculator with the four arithmetical operations
- Duplication of the input signal
- Input for RTD, Ohm, TC, mV, mA, and V
- Universal supply by AC or DC

Application

- Redundancy measurement of temperature by means of two sensors, where the secondary sensor takes over the measurement when a sensor error occurs on the primary sensor.
- Duplication of the input signal, e.g. from a temperature sensor or an analog process signal to two separate analog outputs.
- Signal calculator with four arithmetical operations: Addition, subtraction, multiplication and division.
- Example: Differential measurement: (Input 1 * K1) - (Input 2 * K2) + K4
- Example: Average measurement: (Input 1 * 0.5) + (Input 2 * 0.5) + K4
- Example: Different functions on the outputs: Output 1 = input 1 - input 2, and Output 2 = input 1 + input 2
- I.S. safety barrier and power supply for 2-wire transmitters.

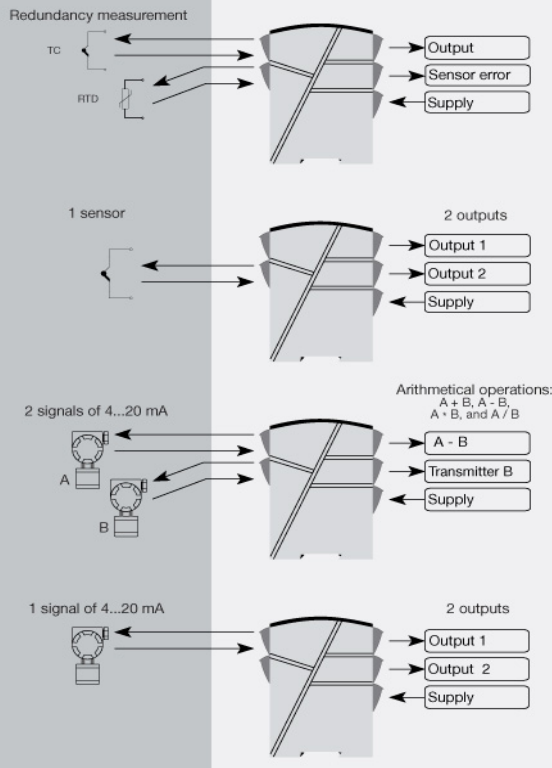
Technical characteristics

- Within a few seconds the user can program PR5115B to a selected application using the configuration program PReset.
- A green front LED indicates normal operation, sensor error on each sensor, and functional error.
- 5-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.

Connections



Order:

Type	Input	
5115B	RTD / TC / mV / R	: 1
	mA / V / mV	: 2
	Input 1, RTD / TC / mV / R	: 3
	Input 2, mA / V / mV	

***NB!** Please remember to order CJC connectors type 5910EEx (input 1) and 5913EEx (input 2) for TC inputs with an internal CJC.

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
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)
Redundancy switch-over time..... ≤ 400 ms
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

Max. offset..... 50% of selected max. value
RTD input..... Pt100, Ni100, lin. R
Cable resistance per wire (max.), RTD..... 10 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
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
Voltage input: Measurement range..... 0...250 VDC
mV input: Measurement range..... -150...+150 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..... 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, current output..... ≤0.01% of span/100 Ω
Current limit..... ≤ 28 mA
Voltage output: signal range..... 0...10 VDC
Voltage output, 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
Effect of external 2-wire supply voltage variation..... < 0.005% of span / V
Max. external 2-wire supply..... 29 VDC
Sensor error indication, current output..... Programmable 0...23 mA
NAMUR NE 43 Upscale/Downscale..... 23 mA / 3.5 mA
*of span..... = of the presently selected range

Approvals

EMC..... EN 61326-1
LVD..... EN 61010-1
PELV/SELV..... IEC 364-4-41 and EN 60742
ATEX..... DEMKO 00ATEX128567
GOST R..... Yes
GOST Ex..... Yes
DNV Marine..... Stand. f. Certific. No. 2.4