PERFORMANCE MADE SMARTER



Ex repeater / power supply

5104B

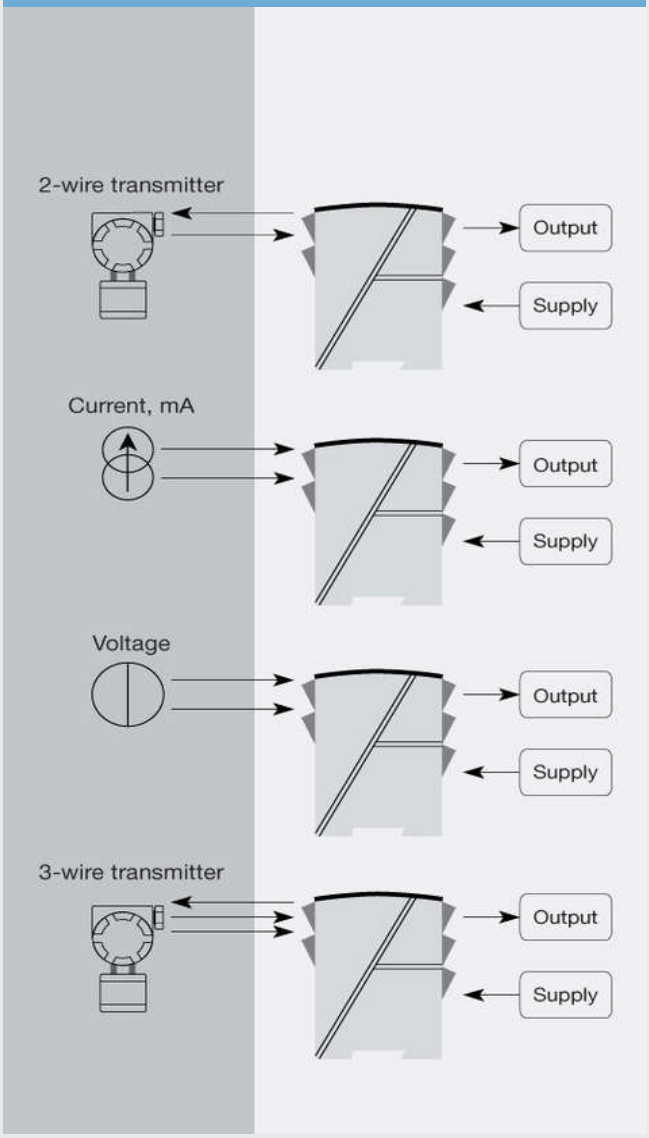
– 1- or 2-channel version
– 3- / 5-port 3.75 kVAC galvanic isolation
– Loop supply > 17.1 V in hazardous area
– 20 programmable measurement ranges
– Universal supply by AC or DC

Application
- Supply voltage and safety barrier for 2-wire transmitters mounted in a hazardous area.
- Safety barrier for analog current / voltage signals from a hazardous area.
- 1 : 1 or signal conversion of analog current / voltage signals.

Technical characteristics
- The 20 factory-calibrated measurement ranges in the 5104B can be selected by the internal DIP-switches without the need for recalibration. Special measurement ranges can be delivered.
- PR5104B is based on microprocessor technology for gain and offset. The analog signal is transmitted at a response time of less than 25 ms.
- Inputs, outputs, and supply are floating and galvanically separated.
- The output can be connected either as an active current / voltage transmitter or as a 2-wire transmitter.

Mounting / installation
- Mounted vertically or horizontally on a DIN rail. By way of the 2-channel version up to 84 channels per meter can be mounted.
- NB: 5104B is recommended as I.S. barrier for 5331D, 5333D, 5334B, 5343B, 6331B, 6333B, and 6334B.

Applications



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Order:

Type	Input		Output		Channels	
5104B	0...20 mA	: A	Special	: 0	Single	: A
	4...20 mA	: B	0...20 mA	: 1	Double	: B
	0...10 V	: E	4...20 mA	: 2		
	2...10 V	: F	0...1 V	: 4		
	Special	: X	0.2...1 V	: 5		
			0...10 V	: 6		
			2...10 V	: 7		

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
DIN rail type..... DIN 46277
Weight approx..... 225 g
Wire size..... 1 x 2.5 mm^2 stranded wire
Screw terminal torque..... 0.5 Nm
Vibration..... IEC 60068-2-6
2...13.2 Hz..... ±1 mm
13.2...100 Hz..... ±0.7 g

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..... ≤ 3 W (2 channels)
Internal power dissipation..... ≤ 2 W (2 channels)

Isolation voltage

Isolation voltage, test / working..... 3.75 kVAC / 250 VAC
PELV/SELV..... IEC 61140

Auxiliary supplies

2-wire supply (pin 44...42 and 54...52)..... 28...17.1 VDC / 0...20 mA

Response time

Response time (0...90%, 100...10%)..... < 25 ms

Signal / noise ratio..... Min. 60 dB (0...100 kHz)
Accuracy..... Better than 0.1% of sel. range
EMC immunity influence..... < ±0.5% of span
Extended EMC immunity: NAMUR NE21, A criterion, burst..... < ±1% of span

Input specifications

Common input specifications

Max. offset..... 20% of max. value

Current input

Measurement range..... 0...20 mA
Min. measurement range (span)..... 16 mA
Input resistance..... Nom. 10 Ω + PTC 10 Ω

Voltage input

Measurement range..... 0...10 VDC
Min. measurement range (span)..... 8 VDC
Input resistance..... > 2 MΩ

Output specifications

Current output

Signal range..... 0...20 mA
Min. signal range..... 16 mA
Load (@ current output)..... ≤ 600 Ω
Load stability..... ≤ 0.01% of span / 100 Ω
Current limit..... ≤ 28 mA

Passive 2-wire mA output

Effect of external 2-wire supply voltage variation..... < 0.005% of span / V

Voltage output

Signal range..... 0...1 VDC / 0...10 VDC
Min. signal range..... 0.8 VDC / 8 VDC
Load (@ voltage output)..... ≥ 500 kΩ

External loop supply..... 29 VDC
of span..... = of the presently selected range

Observed authority requirements

EMC..... 2014/30/EU
LVD..... 2014/35/EU
EAC..... TR-CU 020/2011

Approvals

ATEX 2014/34/EU..... DEMKO 99ATEX126013, II (1) GD [EEx ia] IIC
UL..... UL 913, UL 508
EAC Ex TR-CU 012/2011..... RU C-DK.GB08.V.00410
DNV-GL Marine..... Stand. f. Certific. No. 2.4