

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

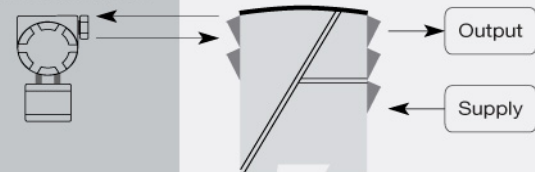
- The 20 factory-calibrated measurement ranges in the 5104B can be selected by the internal DIP-switches without the need for recalibration. Special measurement ranges can be delivered.
- PR5104B is based on microprocessor technology for gain and offset. The analog signal is transmitted at a response 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

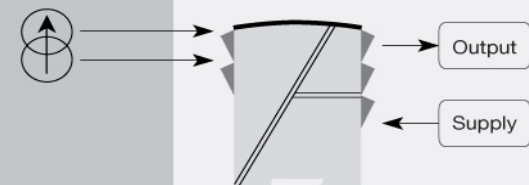
- Mounted vertically or horizontally on a DIN rail. By way of the 2-channel version up to 84 channels per meter can be mounted.
- NB: 5104B is recommended as I.S. barrier for 5331D, 5333D, 5334B, 5343B, 6331B, 6333B, and 6334B.

Connections

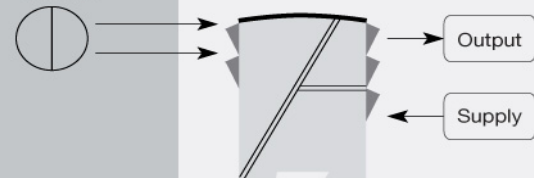
2-wire transmitter



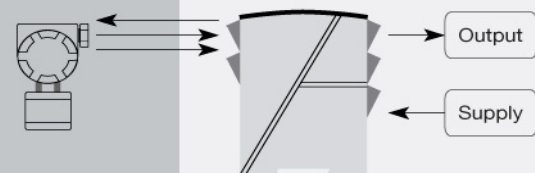
Current, mA



Voltage



3-wire transmitter



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

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
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 : 2007
Vibration: 2...25 Hz.....	±1.6 mm
Vibration: 25...100 Hz.....	±4 g

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 (2 channels)
Internal consumption.....	≤ 2 W (2 channels)
Isolation voltage, test / working.....	3.75 kVAC / 250 VAC
Auxiliary supply: 2-wire supply (pin 44...42 and 54...52).....	28...17.1 VDC / 0...20 mA
Signal / noise ratio.....	Min. 60 dB (0...100 kHz)
Response time (0...90%, 100...10%).....	< 25 ms
Accuracy.....	Better than 0.1% of selected range
EMC immunity influence.....	< ±0.5% of span
Extended EMC immunity: NAMUR NE 21, A criterion, burst.....	< ±1% of span

Input specifications

Max. offset.....	20% of max. value
Current input: Measurement range.....	0...20 mA
Min. measurement range (span), current input.....	16 mA
Input resistance, current input.....	Nom. 10 Ω + PTC 10 Ω
Voltage input: Measurement range.....	0...10 VDC
Min. measurement range (span), voltage input.....	8 VDC
Input resistance, voltage input.....	> 2 MΩ

Output specifications

Max. offset.....	20% of max. value
Current output: Signal range.....	0...20 mA
Min. signal range.....	16 mA
Load (max.).....	20 mA/600 Ω/12 VDC
Load stability, current output.....	≤ 0.01% of span / 100 Ω
Current limit.....	≤ 28 mA
External loop supply.....	29 VDC
Effect of external 2-wire supply voltage variation.....	< 0.005% of span / V
Voltage output: signal range.....	0...1 VDC / 0...10 VDC
Voltage output, min. signal range.....	0.8 VDC / 8 VDC
Load (min.).....	500 kΩ
*of span.....	= of the presently selected range

Approvals

EMC.....	EN 61326-1
LVD 2006/95/EC.....	EN 61010-1
PELV/SELV.....	IEC 364-4-41 and EN 60742
ATEX 2004/108/EC.....	DEMKO 99ATEX126013, II (1) GD [EEx ia] IIC
UL.....	UL 913, UL 508
EAC TR-CU 020/2011.....	EN 61326-1
EAC Ex TR-CU 012/2011.....	RU C-DK.GB08.V.00410
DNV Marine.....	Stand. f. Certific. No. 2.4