

## 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

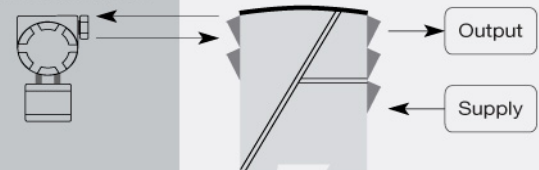
- The 20 factory-calibrated measurement ranges in the 5104B can be selected by the internal DIP-switches without the need for recalibration. Special measurement ranges can be delivered.
- PR5104B is based on microprocessor technology for gain and offset. The analog signal is transmitted at a response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

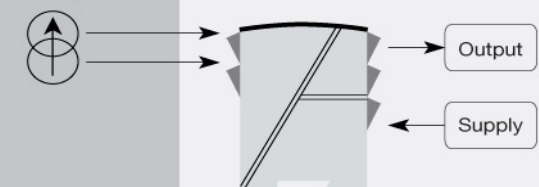
- Mounted vertically or horizontally on a DIN rail. By way of the 2-channel version up to 84 channels per meter can be mounted.
- NB: 5104B is recommended as I.S. barrier for 5331D, 5333D, 5334B, 5343B, 6331B, 6333B, and 6334B.

#### Applications

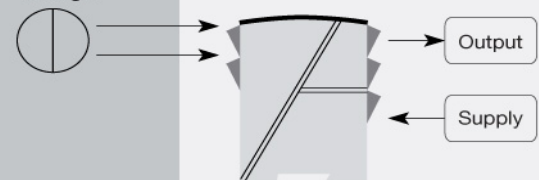
##### 2-wire transmitter



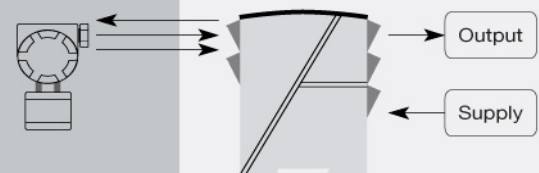
##### Current, mA



##### 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

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 <sup>2</sup> 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