



**GALVANIC INSULATED
FOR ANALOGICAL SIGNALS**

Manufactured by PR Electronics

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

Application:

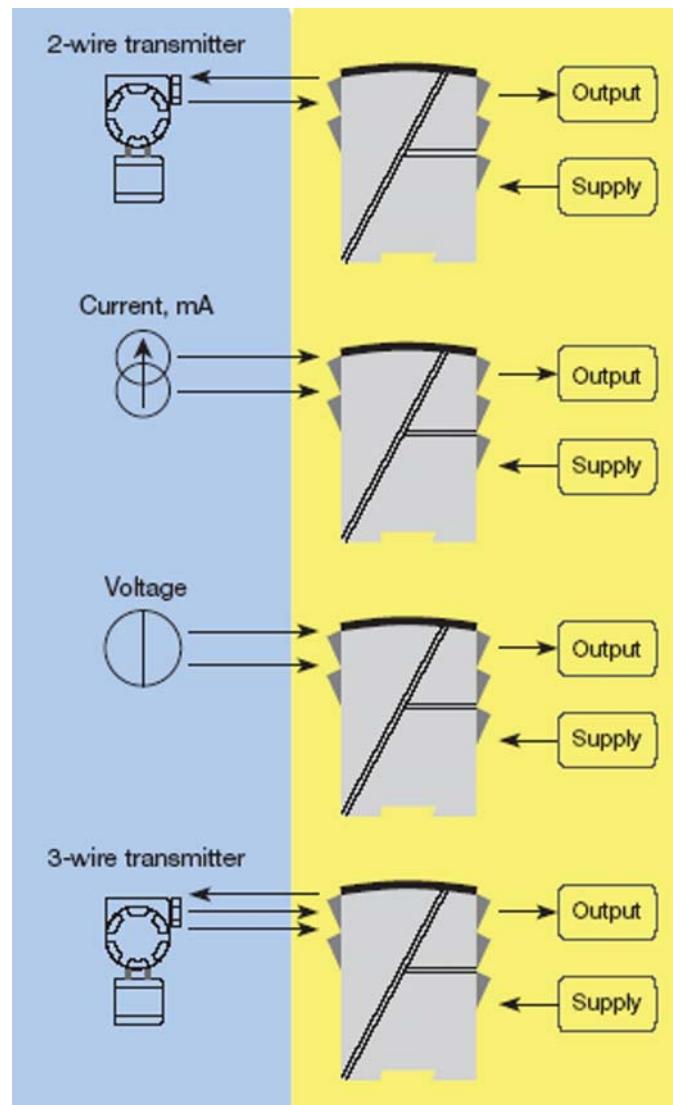
- Supply voltage and safety barrier for 2-wire transmitters mounted in a hazardous area.
- Safety barrier for analogue current / voltage signals from a hazardous area.
- 1 : 1 or signal conversion of analogue current / voltage signals.

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 analogue 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 metre can be mounted.
- **NB:** 5104B is recommended as Ex barrier for 5331B, 5333B, 5334B, 5343B, 6331B, 6333B, and 6334B.

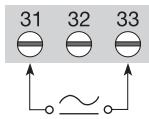


Order: 5104B

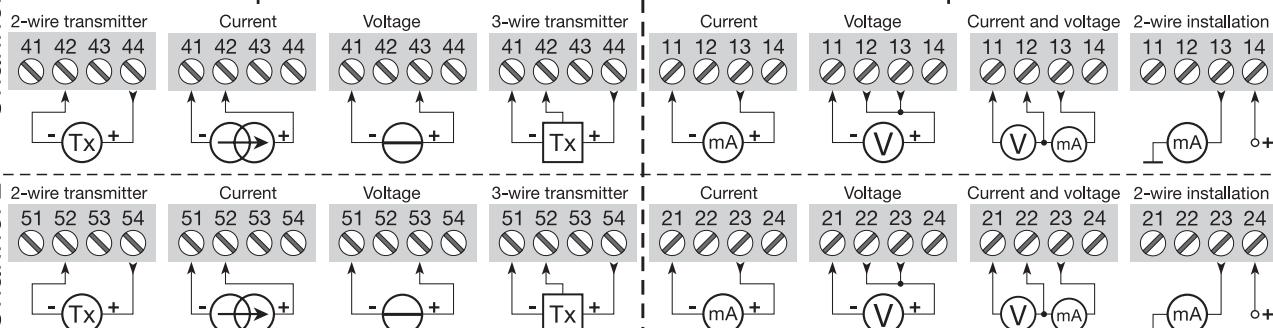
Type	Input	Output	Channels
5104B	0...20 mA : A 4...20 mA : B 0...10 V : E 2...10 V : F Special : X	Special : 0 0...20 mA : 1 4...20 mA : 2 0...1 V : 4 0.2...1 V : 5 0...10 V : 6 2...10 V : 7	Single : A Double : B

Connections:

Supply:



Channel 1

Inputs:

Channel 2

Electrical specifications:**Specifications range:**

-20°C to +60°C

Common specifications:

Supply voltage, universal	21.6...253 VAC
	50...60 Hz
	or 19.2...300 VDC
Internal consumption	≤ 2 W (2 channels)
Max. consumption.....	≤ 3 W (2 channels)
Fuse.....	400 mA SB / 250 VAC
Isolation voltage, test / operation.....	3.75 kVAC / 250 VAC
Signal / noise ratio.....	Min. 60 dB (0...100 kHz)
Response time (0...90%, 100...10%) ...	< 25 ms
Calibration temperature.....	20...28°C
Accuracy, the greater of the general and basic values:	

General values		
Input type	Absolute accuracy	Temperature coefficient
All	≤ ±0.1% of span	≤ ±0.01% of span / °C

Basic values		
Input type	Basic accuracy	Temperature coefficient
mA	≤ ±16 µA	≤ ±1.6 µA/°C
Volt	≤ ±8 mV	≤ ±0.8 mV/°C

EMC immunity influence	< ±0.5% of span
Extended EMC immunity:	
NAMUR NE 21, A criterion, burst	< ±1% of span

Auxiliary supply:

Loop supply (pin 44...42 and 54...52).	28...17.1 VDC / 0...20 mA
Max. wire size.....	1 x 2.5 mm² stranded wire
Screw terminal torsion.....	0.5 Nm
Relative humidity	< 95% RH (non-cond.)
Dimensions (HxWxD).....	109 x 23.5 x 130 mm
DIN rail type.....	DIN 46277
Protection degree.....	IP20
Weight	225 g

Current input:

Measurement range	0...20 mA
Min. measurement range (span).....	16 mA
Max. offset.....	20% of max. value
Input resistance.....	Nom. 10 Ω + PTC 10 Ω

Voltage input:

Measurement range	0...10 VDC
Min. measurement range (span).....	8 VDC
Max. offset.....	20% of max. value
Input resistance.....	> 2 MΩ

Current output and 2-wire 4...20 mA output:

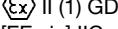
Signal range (span).....	0...20 mA
Min. signal range (span)	16 mA
Max. offset.....	20% of max. value
Load (max.).....	20 mA / 600 Ω / 12 VDC
Load stability	≤ 0.01% of span / 100 Ω
Current limit.....	≤ 28 mA
Max. external loop supply.....	29 VDC
Effect of external loop supply voltage change	< 0.005% of span / V

Voltage output:

Signal range (span).....	0...1 VDC / 0...10 VDC
Min. signal range (span)	0.8 VDC / 8 VDC
Max. offset.....	20% of max. value
Load (min.).....	500 kΩ

EEEx / I.S. approval:

DEMKO 99ATEX126013



[Ex ia] IIC

0, 1, 2, 20, 21 or 22

Applicable in zone

Ex / I.S. data:

Um	: 250 V
Uo	: 28 VDC
Io	: 93 mA DC
Po	: 0.65 W
Lo	: 3 mH
Co	: 0.08 µF

UL, applicable in zone

IS, Cl. I, Div. 1, Gr. A, B, C, D

IS, Cl. I, zone 0 / 1, Gr. IIC

IS, Cl. II, Div. 1 Gr. E, F, G

UL Control Drawing No. 5104QU01

Marine approval:

Det Norske Veritas, Ships & Offshore .. Stand. for Certific. No. 2.4

GOST R approval:

VNIIIFTRI, Cert No. See homepage

Observed authority requirements:

EMC 2004/108/EC	EN 61326-1
LVD 2006/95/EC	EN 61010-1
PELV/SELV.....	IEC 364-4-41
	and EN 60742
ATEX 94/9/EC	EN 50014, EN 50020 and
	EN 50281-1-1
UL	UL 913, UL 508

Of span = Of the presently selected range