

Ex REPEATER / POWER SUPPLY



- 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:

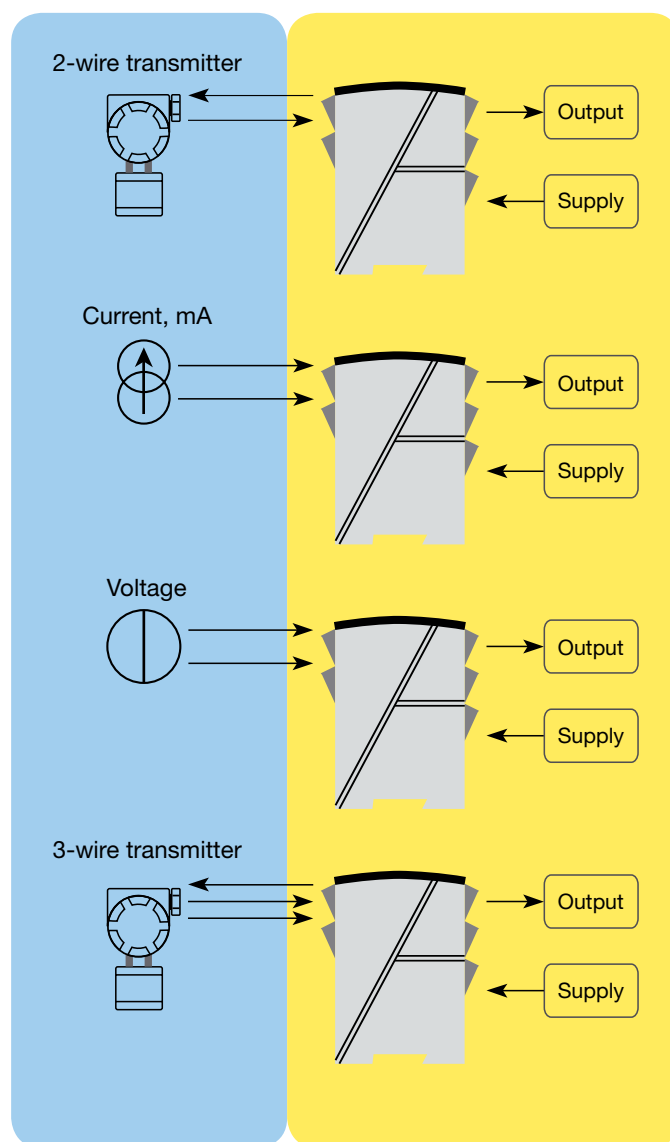
- Supply voltage and safety barrier for 2-wire transmitters mounted in a hazardous area.
- Safety barrier for analogue current / voltage signals from a hazardous area.
- 1 : 1 or signal conversion of analogue current / voltage signals.

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 5331D, 5333D, 5334B, 5343B, 6331B, 6333B, and 6334B.

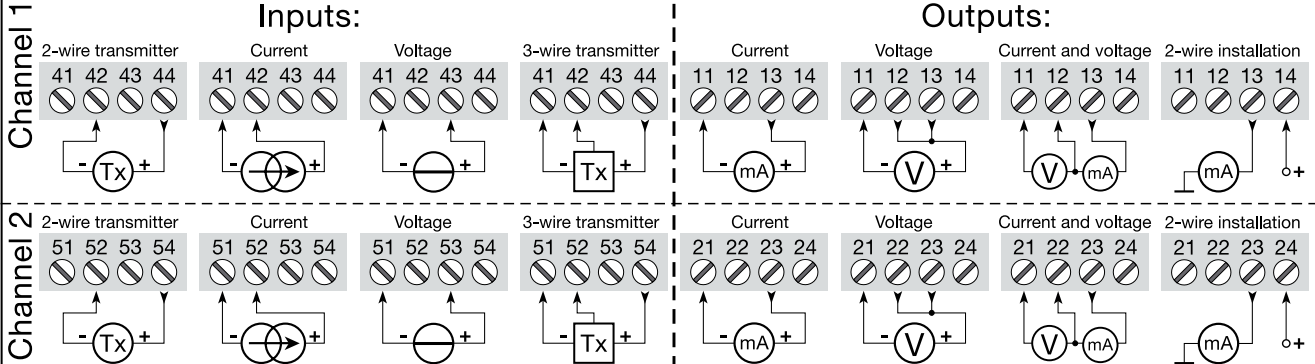
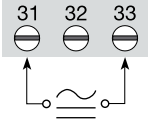


Order: 5104B

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	

Connections:

Supply:



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

EEx / I.S. approval:

DEMKO 99ATEX126013 II (1) GD
 [EEx ia] IIC
 Applicable in zone 0, 1, 2, 20, 21 or 22

Ex / I.S. data:

U_m : 250 V
 U_o : 28 VDC
 I_o : 93 mADC
 P_o : 0.65 W
 L_o : 3 mH
 C_o : 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:

VNIIFTRI, Cert No. www.prelectronics.com

Observed authority requirements: Standard:

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