

# Ex REPEATER / POWER SUPPLY



- 1- or 2-channel version
- 3- / 5-port 3.75 kVAC galvanic isolation
- Loop supply > 18 V in Ex area
- 20 programmable measurement ranges
- Universal supply by AC or DC



**Application:**

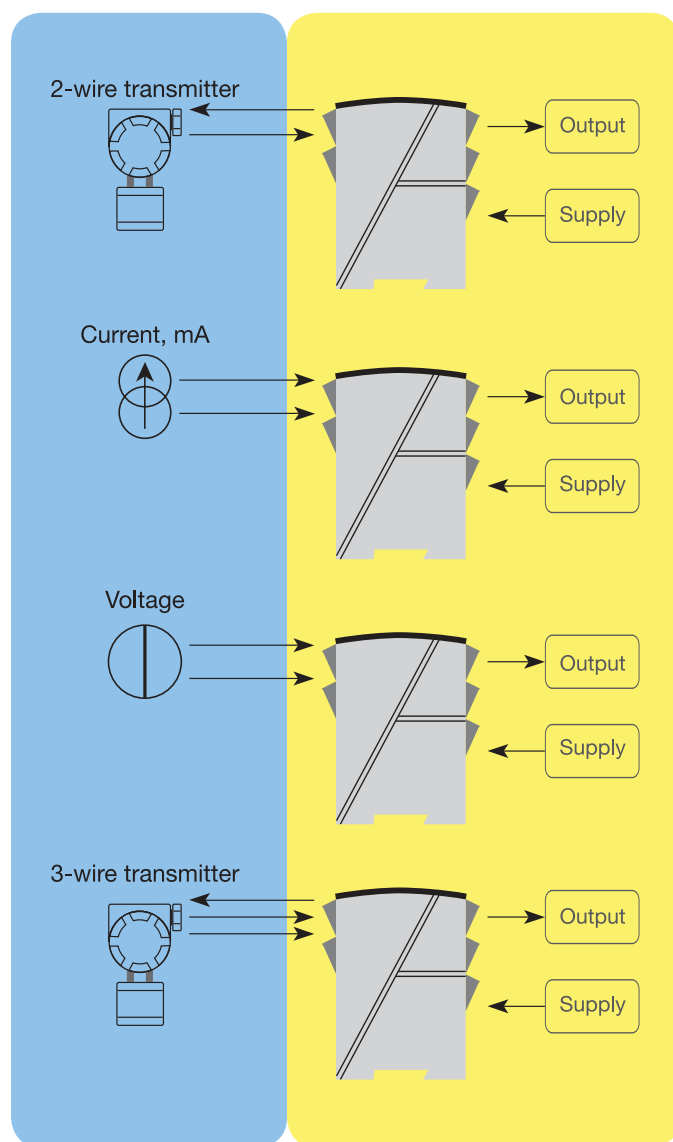
- Supply voltage and safety barrier for 2-wire transmitters mounted in a hazardous area.
- Safety barrier for analogue current / voltage signals from a hazardous area.
- 1 : 1 or signal conversion of analogue current / voltage signals.

**Technical characteristics:**

- The 20 factory-calibrated measurement ranges in the 5104B can be selected by the internal dipswitches 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, 6331B, 6333B, and 6334B.

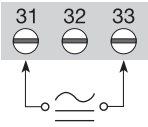


Order : 5104B

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	

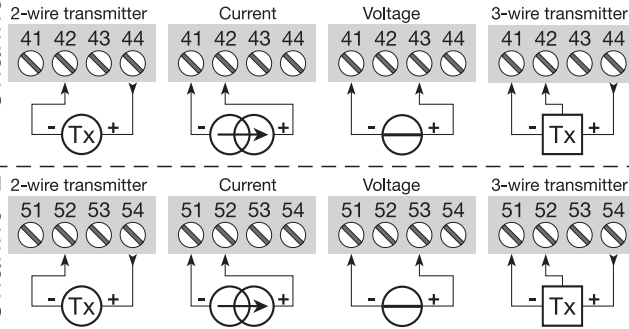
**Connections:**

Supply:

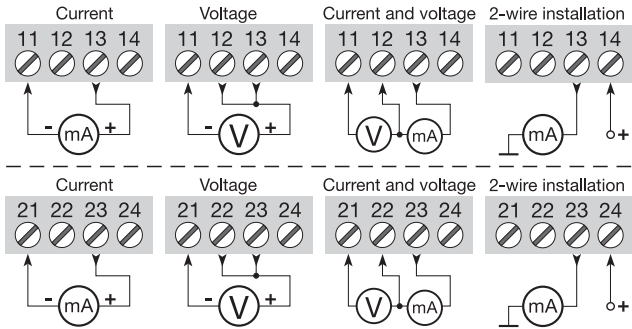


Channel 1

**Inputs:**



**Outputs:**



Channel 2

**Electrical specifications:**

**Specifications range:**

-20°C to +60°C

**Common specifications:**

- Supply voltage, universal ..... 24...230 VAC ±10%
- 50...60 Hz
- 24...250 VDC ±20%
- 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 ..... 28...18 VDC / 0...20 mA
- Max. wire size ..... 1 x 2.5 mm<sup>2</sup> multicore cable
- 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
- Tightness (enclosure / terminals) ..... IP50 / 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

**Ex data:**

- U<sub>m</sub> ..... ≤ 250 V
- U<sub>o</sub> ..... 28 VDC
- I<sub>o</sub> ..... 93 mADC
- P<sub>o</sub> ..... 0.65 W
- L<sub>o</sub> ..... 3 mH
- C<sub>o</sub> ..... 0.08 µF

**Ex / I.S. approval:**

- DEMKO 99. ATEX 126013 ..... II (1) G D
- [EEx ia] IIC
- Applicable in zone ..... 0, 1, 2, 20, 21 or 22
- UL, applicable in zone ..... IS, CL. I, DIV. 1, GP A-D
- IS, CL. I, zone 0, 1 GP IIC
- IS, CL. II, DIV. 1 GP E, F, G

**Observed authority requirements:**

- EMC 89/336/EEC, Emission ..... EN 50 081-1, EN 50 081-2
- Immunity ..... EN 50 082-2, EN 50 082-1
- Emission and immunity ..... EN 61 326
- LVD 73/23/EEC ..... EN 61 010-1
- PELV/SELV ..... IEC 364-4-41
- and EN 60 742
- ATEX 94/9/EC ..... EN 50 014, EN 50 020 and
- EN 50 281-1-1
- UL ..... UL 913, UL 508

**Of span** = Of the presently selected range