

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:

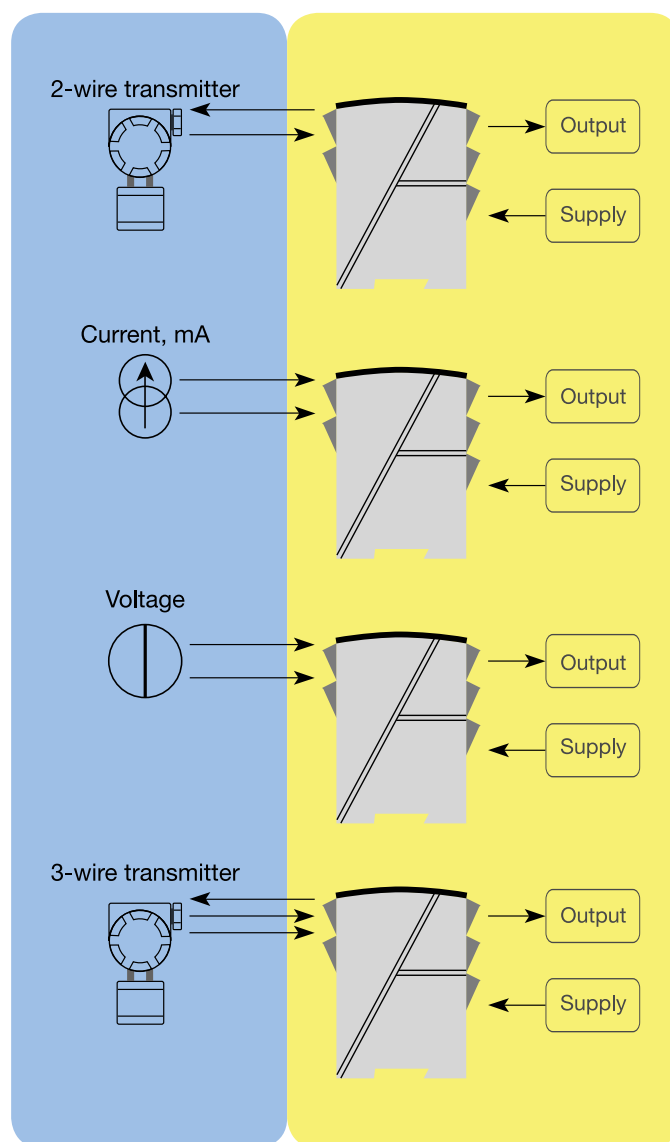
- Supply voltage and safety barrier for 2-wire transmitters mounted in a hazardous area.
- Safety barrier for analogue current / voltage signals from a hazardous area.
- 1 : 1 or signal conversion of analogue current / voltage signals.

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, 5343B, 6331B, 6333B, and 6334B.

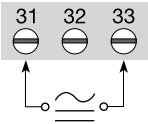


Order: 5104B

| 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 | |

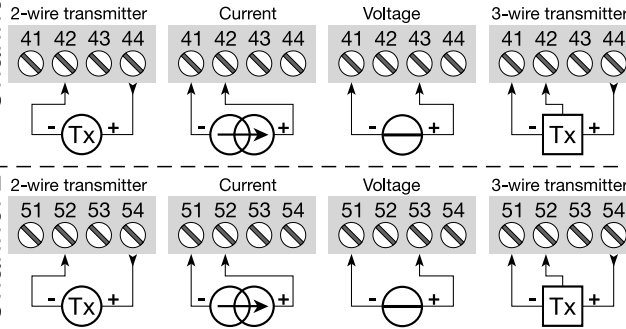
Connections:

Supply:

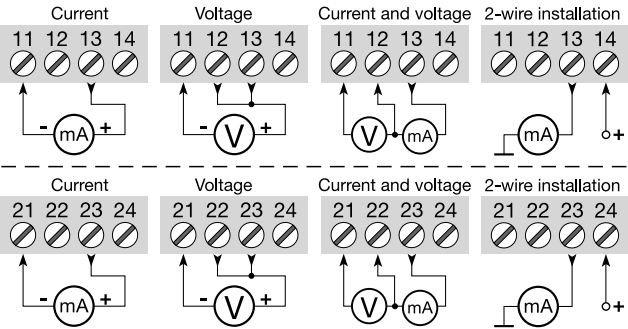


Channel 1

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 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
 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 / I.S. data:

U_m : 250 V
 U₀ : 28 VDC
 I₀ : 93 mADC
 P₀ : 0.65 W
 L₀ : 3 mH
 C₀ : 0.08 µF

EEx / I.S. approval:

DEMKO 99ATEX126013 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, Gr. A, B, C, D
 IS, Cl. I, zone 0 / 1, Gr. IIC
 IS, Cl. II, Div. 1 Gr. E, F, G

Observed authority requirements: Standard:

EMC 89/336/EEC, Emission EN 50081-1, EN 50081-2
 Immunity EN 50082-2, EN 50082-1
 Emission and immunity EN 61326
 LVD 73/23/EEC 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