Repeater / power supply

5104A

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

Application

- Power supply and signal isolator for 2-wire transmitters.
- Signal isolator for analog current / voltage signals.
- 1 : 1 or signal conversion of analog current / voltage signals.

Technical characteristics

- The 20 factory-calibrated measurement ranges in the 5104A can be selected by the internal DIP-switches without the need for recalibration. Special measurement ranges can be delivered.
- PR5104A 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.

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<table>
<thead>
<tr>
<th>Type</th>
<th>Input</th>
<th>Output</th>
<th>Channels</th>
</tr>
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<tbody>
<tr>
<td>5104A</td>
<td>0...20 mA</td>
<td>A</td>
<td>Single</td>
</tr>
<tr>
<td>4...20 mA</td>
<td>B</td>
<td>0...20 mA</td>
<td>1</td>
</tr>
<tr>
<td>0...10 V</td>
<td>E</td>
<td>4...20 mA</td>
<td>2</td>
</tr>
<tr>
<td>2...10 V</td>
<td>F</td>
<td>0...1 V</td>
<td>4</td>
</tr>
<tr>
<td>Special</td>
<td>X</td>
<td>0.2...1 V</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0...10 V</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2...10 V</td>
<td>7</td>
</tr>
</tbody>
</table>

**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
- **Weight approx**: 225 g
- **DIN rail type**: DIN 46277
- **Wire size**: 1 x 2.5 mm² stranded wire
- **Screw terminal torque**: 0.5 Nm

**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

**Response time**
- **Response time (0...90%, 100...10%)**: < 25 ms

**Auxiliary supplies**
- **2-wire supply (pin 44...42 and 54...52)**: 28...17.1 VDC / 0...20 mA

**Signal / noise ratio**: Min. 60 dB (0...100 kHz)

**EMC immunity influence**: < ±0.3% 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**
- **Max. external 2-wire supply**: 29 VDC
- **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

**Observed authority requirements**

**EMC**: 2014/30/EU
**LVD**: 2014/35/EU
**EAC**: TR-CU 020/2011
**Approvals**
- **UL**: UL 508 / C22.2 no. 14
- **DNV-GL Marine**: Stand. f. Certific. No. 2.4