Application:
- Linearised temperature measurement with Pt100...Pt1000, Ni100...Ni1000, or TC sensor.
- Conversion of linear resistance variation to a standard analogue current signal, for instance from valves or Ohmic level sensors.
- Amplification of a bipolar mV signal to a standard 4...20 mA current signal.

Technical characteristics:
- Within a few seconds the user can program PR5331A to measure temperatures within all ranges defined by the norms.
- The RTD and resistance inputs have cable compensation for 2-, 3- and 4-wire connection.
- Continuous check of vital stored data for safety reasons.

Mounting / installation:
- For DIN form B sensor head or DIN rail mounting with the PR fitting type 8421.
### Electrical specifications:

**Specifications range:**
-40°C to +85°C

**Common specifications:**
- Supply voltage, DC: 7.2...35 V
- Voltage drop: 7.2 VDC
- Isolation voltage, test / operation: 1.5 kVAC / 50 VAC
- Communications interface: Loop Link
- Signal / noise ratio: Min. 60 dB
- Signal dynamics, input: 20 bit
- Signal dynamics, output: 16 bit

**Accuracy, the greater of general and basic values:**

#### Vibration
- IEC 60068-2-6 Test FC

#### Lloyd's specification no. 1
- 4 g / 2...100 Hz

#### Humidity
- < 95% RH (non-cond.)

#### Dimensions
- Ø 44 x 20.2 mm

#### Protection degree (encl. / terminal)
- IP68 / IP00

### Electrical specifications, input:

#### RTD, 2-wire
- 3, 4, 5, 6

#### RTD, 3-wire
- 3, 4, 5, 6

#### RTD, 4-wire
- 3, 4, 5, 6

#### TC, internal CJC
- 3, 4, 5, 6

#### TC, external CJC
- 3, 4, 5, 6

#### mV
- 1, 2

#### Input:
- Resistance, 2-wire
- Resistance, 3-wire
- Resistance, 4-wire

#### Output:
- 2-wire installation

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### TC input:

<table>
<thead>
<tr>
<th>Type</th>
<th>Min. temperature</th>
<th>Max. temperature</th>
<th>Min. span</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>+400°C</td>
<td>+1820°C</td>
<td>200°C</td>
<td>IEC584</td>
</tr>
<tr>
<td>E</td>
<td>-100°C</td>
<td>+1000°C</td>
<td>50°C</td>
<td>IEC584</td>
</tr>
<tr>
<td>J</td>
<td>-100°C</td>
<td>+1200°C</td>
<td>50°C</td>
<td>IEC584</td>
</tr>
<tr>
<td>K</td>
<td>-180°C</td>
<td>+1372°C</td>
<td>50°C</td>
<td>IEC584</td>
</tr>
<tr>
<td>L</td>
<td>-100°C</td>
<td>+900°C</td>
<td>50°C</td>
<td>DIN 43710</td>
</tr>
<tr>
<td>N</td>
<td>-180°C</td>
<td>+1500°C</td>
<td>100°C</td>
<td>IEC584</td>
</tr>
<tr>
<td>R</td>
<td>-50°C</td>
<td>+1760°C</td>
<td>200°C</td>
<td>IEC584</td>
</tr>
<tr>
<td>S</td>
<td>-50°C</td>
<td>+1760°C</td>
<td>200°C</td>
<td>IEC584</td>
</tr>
<tr>
<td>T</td>
<td>-200°C</td>
<td>+400°C</td>
<td>50°C</td>
<td>IEC584</td>
</tr>
<tr>
<td>U</td>
<td>-200°C</td>
<td>+600°C</td>
<td>75°C</td>
<td>DIN 43710</td>
</tr>
<tr>
<td>W3</td>
<td>0°C</td>
<td>+2300°C</td>
<td>200°C</td>
<td>ASTM E988-90</td>
</tr>
<tr>
<td>W5</td>
<td>0°C</td>
<td>+2300°C</td>
<td>200°C</td>
<td>ASTM E988-90</td>
</tr>
<tr>
<td>LR</td>
<td>-200°C</td>
<td>+800°C</td>
<td>50°C</td>
<td>GOST 3044-84</td>
</tr>
</tbody>
</table>

**Cold junction compensation:** < ±1.0°C

**Voltage input:**
- Measurement range: -12...800 mV
- Min. span: 5 mV

**Current output:**
- Signal range: 4...20 mA
- Min. signal range: 16 mA
- Updating time: 440 ms
- Load resistance: ≤ (Vsupply - 7.2) / 0.023 [Ω]

**Sensor error detection:**
- Programmable
- 3.5...23 mA

### Marine approval:
- Det Norske Veritas, Ships & Offshore
- Stand. for Certific. No. 2.4

### GOST R approval:
- VNIIM, Cert. No.
- Ross DK.ME48.V01899

### Observed authority requirements:
- Standard:
  - EMC 2004/108/EC
  - Emission and immunity
  - EN 61326

### Of span

- Of the presently selected range

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### RTD and linear resistance input:

<table>
<thead>
<tr>
<th>Type</th>
<th>Min. value</th>
<th>Max. value</th>
<th>Min. span</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pt100</td>
<td>-200°C</td>
<td>+850°C</td>
<td>25°C</td>
<td>IEC 60751</td>
</tr>
<tr>
<td>Ni100</td>
<td>-60°C</td>
<td>+250°C</td>
<td>25°C</td>
<td>DIN 43760</td>
</tr>
<tr>
<td>Lin. R</td>
<td>0 Ω</td>
<td>5000 Ω</td>
<td>30 Ω</td>
<td>-----</td>
</tr>
</tbody>
</table>

**Cable resistance per wire (max.)**
- 5 Ω

**Sensor current**
- Nom. 0.2 mA

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### Table:

<table>
<thead>
<tr>
<th>Type</th>
<th>Ambient temperature</th>
<th>Galvanic isolation</th>
</tr>
</thead>
<tbody>
<tr>
<td>5331A</td>
<td>-40°C...+85°C</td>
<td>1500 VAC : B</td>
</tr>
</tbody>
</table>

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### Connections:

- RTD, 2-wire
- RTD, 3-wire
- RTD, 4-wire
- TC, internal CJC
- TC, external CJC
- mV

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### Order:

<table>
<thead>
<tr>
<th>Type</th>
<th>5331A</th>
</tr>
</thead>
</table>

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### 5331AY111-UK (0811)