SRac Series

Economical high performance ac resistance standards

Features:
• Very stable - <20 ppm/year
• Calibrated at dc and 1 kHz
• Excellent temperature coefficient - as low as 1 ppm/°C
• < 20 ppm difference between dc and ac values at 1 kHz for resistances ≤ 100 kΩ
• Wide range of values - 1 mΩ to 10 MΩ
• bnc option (-bnc)
• Custom values are available
• Optional transit case

SRAC SERIES
Designed for use as a reference or working standard in industrial, research, and educational laboratories.

Frequency response
Frequency response of the foil resistors are given by the formula below:

$$R_s = \frac{R_{dc}}{(1 - \omega^2 LC)^2 + (\omega R_{dc}C)^2}$$

$$R_p = R_{dc}(1 + (\omega L/R_{dc})^2)$$

Where worse case L = 0.1 μH and C = 1 pF

SPECIFICATIONS

Calibration conditions:
At 23°C, low power, traceable to SI units. Connections as indicated in table.

Terminals:
Gold plated, tellurium copper, high current, heavy duty, low thermal-emf binding position standard 3/4 inch spacing. A case GROUND terminal is provided on all units.

Dimensions: 8.6 cm H x 10.5 cm W x 12.7 cm D (3.4” x 4.15” x 5”)

Operating temperature range: 15 to 30°C.

<table>
<thead>
<tr>
<th>Model</th>
<th>Nominal (Ω)</th>
<th>Initial adjustment to nominal (ppm)</th>
<th>Stability 1 year (ppm)</th>
<th>Tempco (ppm/°C)</th>
<th>Resistor type</th>
<th>Calibration uncertainty dc ( Typical) (ppm)</th>
<th>dc to ac change at 1 kHz (Typical) (ppm)</th>
<th>Max. power (W)</th>
<th>Max. voltage (V)</th>
<th>Max. current (A)</th>
<th>Terminals</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.001</td>
<td>0.001</td>
<td>200</td>
<td>50</td>
<td>20</td>
<td>Manganin strip</td>
<td>200</td>
<td>0.2</td>
<td>0.015</td>
<td>14</td>
<td></td>
<td>4 bp’s + gnd</td>
</tr>
<tr>
<td>0.01</td>
<td>0.01</td>
<td>200</td>
<td>50</td>
<td>20</td>
<td>Manganin wire</td>
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<td>0.6</td>
<td>0.15</td>
<td>4.5</td>
<td></td>
<td>4 bp’s + gnd</td>
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<td>20</td>
<td>20</td>
<td>Foil</td>
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<td>0.15</td>
<td>4.5</td>
<td></td>
<td>4 bp’s + gnd</td>
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<tr>
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<td>100</td>
<td>20</td>
<td>1</td>
<td>Foil</td>
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<td>0.2</td>
<td>0.015</td>
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</tr>
<tr>
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<td>100</td>
<td>20</td>
<td>1</td>
<td>Foil</td>
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<tr>
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<td>100</td>
<td>100</td>
<td>20</td>
<td>1</td>
<td>Foil</td>
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<tr>
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<td>1</td>
<td>Foil</td>
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<tr>
<td>1M</td>
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<td>5</td>
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<td>Wirewound</td>
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<tr>
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<td>Film</td>
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<td>0.1</td>
<td>1000</td>
<td>0.1 mA</td>
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<td>4 bp’s + gnd</td>
</tr>
</tbody>
</table>

Foil resistors have a power coefficient of resistance (PCR) of ±5ppm at rated power due to internal heating
Foil resistors have a voltage coefficient (VC) of < 3ppm/V

ORDERING INFORMATION
Standard model: Select from table above
Custom value: SRX-XXX or SRC-XXX
Transit case for SRac units: SRC-100, for 2 units
SR-100-5, for 5 units

Options:
-bnc 4 bnc connectors plus ground