

RS9010A-RX

wekommm

Very stable, very high load capable Low Ohms Resistance Standards

Technical Data

Applications

- Transfer Standards
- Working Standards
- Reference Resistors
- Calibration
- High Current Measurements

Features

- Mechanically robust and stable
- No special requirements for operation temperatures
- No oil bath required
- Long term stability better 3ppm / year
- Low impacted from temperature hysteresis
- Temperature stability better than 0,3 ppm / °C
- Wide operational range from 20°C to 30°C
- Custom resistance values on special order

Having a very reliable power shunt makes measuring of high currents hassle-free. No need to bother about temperature coefficient or self heating. Just connect the load and make the measurements, which you can rely on to have the same high precision as you expect from wekomm resistors.

What makes our resistor standards special is the very high load capability. Even a short overload condition will not harm the resistor. It retains it's long term stability as it's temperature coefficient. When being warmed up, the resistor will reliably return to the calibrated value, printed on the case.

To eliminate the influence of self heating, we mounted the resistor elements onto a specially designed and machined heat sink which is capable to maintain the temperature even at overload conditions. Combined with an excellent temperature coefficient, you can rely on the fact that the current you are going to measure will have only some negligible influence on your results.

Even at such high loads, the resistors maintain their excellent long term stability which makes them suitable for the use as low ohms transfer standards.



A highly engineered fixation and carefully selected insulation materials make sure, that our resistors withstand mechanical stress and keep their electrical values throughout the years. The massive aluminium case warrants the ruggedness of the elements and provides excellent shielding when guarding comes in play. Specific manufacturing processes help the case to provide thermal buffering capabilities so that short term temperature changes have no effect on the actual measurement. In addition, our resistance elements are extremely stable over a wide temperature range from 20°C to 30°C. This warrants a trouble free operation even outside standard cal lab environments. Internally our resistance standards are build completely neutral towards thermal voltage. The combination of materials does not allow any thermal voltages to build up. On the outside, high quality „Low Thermal“ binding posts, built from directly gold plated copper-tellurium make sure, that if even minimal possible thermal voltages could influence your measurements. For high current, the resistors carry special binding posts and carefully crafted internal wiring, to minimize thermal effects as much as possible.

Specifications



Each resistance standard is calibrated by a calibration laboratory. The measured resistance value is printed on the back side of the resistance standard. The issued certificate of calibration is part of delivery. On special request, a calibration by an accredited (ISO 17025) or national metrology institute (PTB) can be arranged at additional costs. The following table lists the available standard values of resistance. Customer specific values are available on request.

Model	Nominal value mΩ	Adjustment to nominal %		Stability per year (μΩ/Ω)		Resistance change 18°C-28°C from 23°C (μΩ/Ω/°C)		Power coefficient (μΩ/Ω/mW)		maximum current A	Insulation resistance MΩ	Accredited Calibration* (μΩ/Ω)
		max	typ	max	typ	max	typ	max	typ			
RS9010A-R001	1	0.1	0.01	20	3	20	3	0.1	0.05	25	1000	2.3
RS9010A-R01	10	0.1	0.01	20	3	20	3	0.1	0.05	10	1000	1.2
RS9010A-R1	100	0.1	0.01	20	3	20	3	0.1	0.05	2.5	1000	1.2

*1 Uncertainty depending on CalLab -
for specifications or requirements contact us prior to ordering

Operation temperature:

20°C to 30°C

Storage temperature:

0°C to 40°C

repetitive Error (Hysteresis):

30°C to 20°C to 30°C:

neglectable Error

Size:

10cm (H) x 10cm(W) x 11,5cm(D)

Weight:

2 kg - 3 kg
depending on model

Ordering Information

Model:

RS9010A-R001 1mΩ resistance standard
 RS9010A-R01 10mΩ resistance standard
 RS9010A-R1 100mΩ resistance standard

RS9010A-CASE transport case



wekomm engineering GmbH
 Robert-Koch-Str. 7
 D-82152 Planegg
 Germany
 Tel.: +49 89 9041151-0

www.wekomm.de
www.wekomm.com
info@wekomm.de

Okt. 2022
 © 2022 wekomm engineering GmbH

Information contained in this data sheet is up-to-date and correct as at the date of issue. As wekomm engineering GmbH cannot control or anticipate the conditions under which this product may be used, each user should review the information in specific context of the planned use. To the maximum extent permitted by law, wekomm engineering GmbH will not be responsible for damages of any nature resulting from the use or reliance upon the information contained in this data sheet. No express or implied warranties are given other than those implied mandatory by law. We reserve the right to alter our products without notice. This also applies to products already on order provided that such changes do not change the functionality of the product