

# RS9010A-X

## Very Stable Resistance Standards

**wekom**

### Technical Data

#### Applications

- Transfer Standards
- Working Standards
- Reference Resistors
- Calibration

#### Features

- Mechanically robust and stable
- No special requirements for operation temperatures
- No oil bath required
- Long term stability better 1ppm / year
- Low impacted from temperature hysteresis
- Temperature stability typically better than 1 ppm / °C
- Operational range from 20°C to 30°C
- Custom resistance values on special order
- Made in Germany

The resistance standards series RS9010-X are highly stable, ultra precise resistance elements who retain their outstanding performance even in rough environments.

Specifically made and selected precision resistance cells form the foundation of our 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 aluminum case warrants the ruggedness of the components and provides excellent shielding when guarding comes into play. Specific manufacturing processes help 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 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 regarding thermal voltage. The chosen combination of materials does not allow any thermal voltages to build up. For connecting wires, high quality „Low Thermal“ binding posts,



built from directly gold plated copper-tellurium will give you the best possible electrical contact. All these features make the RS9010A-X series resistors to one of the best products in it's class.

# 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 $\Omega$	Adjustment to nominal ( $\mu\Omega/\Omega$ )		Drift per year*1 ( $\mu\Omega/\Omega$ )		Resistance change 18°C-28°C from 23°C ( $\mu\Omega/\Omega/^\circ\text{C}$ )		maximum current mA	maximum voltage V	Accredited Calibration*2
		max	typ	max	typ	max	typ			
RS9010A-1	1	10	3	2	1	2	0.5	500	0.5	*2
RS9010A-10	10	10	3	2	1	1	0.5	100	1	*2
RS9010A-100	100	10	3	1	0.5	1	0.5	50	5	*2
RS9010A-1K	1K	10	3	1	0.5	1	0.5	10	10	*2
RS9010A-10K	10K	10	3	1	0.5	1	0.5	1	10	*2
RS9010A-100K	100K	10	5	1	0.5	2	1	1	100	*2
RS9010A-1M	1M	50	20	5	3	5	3	500 $\mu\text{A}$	200	*2
RS9010A-10M	10M	500	200	10	8	10	5	50 $\mu\text{A}$	200	*2
RS9010A-100M	100M	500	250	20	10	100	25	5 $\mu\text{A}$	200	*2

\*1 After sufficient stabilization time, typical one year

\*2 Uncertainty depending on CalLab - for specifications or special requirements contact us prior to ordering

## Ordering Information

### Model:

**RS9010A-1** 1 $\Omega$  resistance standard  
**RS9010A-10** 10 $\Omega$  resistance standard  
**RS9010A-100** 100 $\Omega$  resistance standard  
**RS9010A-1k** 1K $\Omega$  resistance standard  
**RS9010A-10K** 10K $\Omega$  resistance standard  
**RS9010A-100K** 100K $\Omega$  resistance standard  
**RS9010A-1M** 1M $\Omega$  resistance standard  
**RS9010A-10M** 10M $\Omega$  resistance standard  
**RS9010A-100M** 100M $\Omega$  resistance standard

**RS9010A-CASE** transport case

### 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:

0,8kg - 1,5 kg

depending on model



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