



## 9331 STANDARD AC/DC AIR RESISTOR



### Featuring

- ▶ ISO 17025 Calibrations Available
- ▶ High Stability
- ▶ 100  $\mu\Omega$  to 100 M $\Omega$
- ▶ Operating Range 18 °C to 28 °C
- ▶ Custom Values Available
- ▶ Low-Temperature Coefficient
- ▶ Stability Better than 2.5 ppm/Year
- ▶ No Air or Oil Bath Required
- ▶ Typical AC/DC Error < 1 ppm Up to 1 kHz

| Feature                      | Benefit   |
|------------------------------|---|
| Low-temperature coefficient. | Lower uncertainties.                                  |
| Custom values available.     | Gives you the solution you need for your application. |
| Metal film technology.       | Excellent AC/DC agreement.                            |
| Industry-leading warranty.   | 3 years.  |



## 9331 STANDARD AC/DC AIR RESISTOR

The Measurements International 9331 series of Precision Standard Air Resistors provide high accuracy and stability, for precision, on-site, resistance calibrations for values from 100  $\mu\Omega$  to 100 M $\Omega$ . The small, light and rugged resistance standards are ideal for use as working standards and are often used as artifacts in inter-laboratory comparisons.

Stability and temperature coefficients of the 9331 make this resistor ideal for easy transport and operation in any working environment within the range of 18 °C to 28 °C. The resistance standards require no temperature-controlled oil or air baths to achieve their specifications. However, for optimal performance as a primary set of resistors, it is recommended that the resistors be placed in the Measurements International's model 9300A Air Bath.

Connections to the model 9331 are made using tellurium copper binding posts for values up to 100 M $\Omega$ .

A separate ground terminal is included for screening and the case is hermetically sealed to keep moisture out.

An interconnecting cable may also be ordered with the 9331 Resistance Standards. The interconnecting wire comes in either two- or four-conductor configurations. The wire may be ordered in lengths with screens already attached or in 100 metre rolls. No. 18 gauge solid copper, silver-plated, screened Teflon cable is recommended. Four-conductor cable is recommended to 1 M $\Omega$  and two-conductor cable for values above 1 M $\Omega$ .

Special values are also available at customer request.



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Specifications: Rev 15

| Model       | Nominal Value in $\Omega$ | Tolerance $\pm$ ppm* | Stability ppm/year | Max Current (A) | TC 23 °C $\pm$ 5 °C $\pm$ ppm/°C | Max Voltage (V) |
|-------------|---------------------------|----------------------|--------------------|-----------------|----------------------------------|-----------------|
| 9331/0.0001 | 0.0001                    | 100                  | 25                 | 20              | 100                              | 0.002           |
| 9331/0.001  | 0.001                     | 20                   | 10                 | 6               | 8                                | 0.006           |
| 9331/0.01   | 0.01                      | 50                   | 10                 | 3               | 50                               | 0.03            |
| 9331/0.1    | 0.1                       | 10                   | 4                  | 1               | 0.3                              | 0.1             |
| 9331/1      | 1                         | 2                    | 2.5                | 0.3162          | 0.4                              | 0.32            |
| 9331/10     | 10                        | 2                    | 2.5                | 0.1             | 0.4                              | 1.0             |
| 9331/25     | 25                        | 2                    | 2.5                | 0.0632          | 0.4                              | 1.58            |
| 9331/100    | 100                       | 2                    | 2.5                | 0.0316          | 0.4                              | 3.16            |
| 9331/200    | 200                       | 2                    | 2.5                | 0.0224          | 0.4                              | 4.47            |
| 9331/300    | 300                       | 2                    | 2.5                | 0.0183          | 0.4                              | 5.48            |
| 9331/400    | 400                       | 2                    | 2.5                | 0.0158          | 0.4                              | 6.32            |
| 9331/1 k    | 1 k                       | 2                    | 2.5                | 0.01            | 0.4                              | 10.00           |
| 9331/10 k   | 10 k                      | 2                    | 2.5                | 0.0032          | 0.4                              | 31.62           |
| 9331/12.9 k | 12.9 k                    | 2                    | 2.5                | 0.0028          | 0.4                              | 35.92           |
| 9331/100 k  | 100 k                     | 2                    | 2.5                | 0.001           | 0.4                              | 100.0           |
| 9331/1 M    | 1 M                       | 2                    | 2.5                | 0.0003          | 0.4                              | 316.2           |
| 9331/10 M   | 10 M                      | 5                    | 10                 | 0.0001          | 5                                | 1000            |
| 9331/100 M  | 100 M                     | 10                   | 25                 | 0.00001         | 5                                | 1000            |

\* Tolerance – Defined as the potential variance at 23 °C from the nominal resistance value at the time of manufacture. Due to the natural ageing process, it is recommended that the resistance value be monitored closely for the first year of ownership.

**Dimensions (L x W x H):**  
126 x 80 x 60 (mm)

**Weight:**  
1 kg

**Shipping Weight:**  
Provide with Quote

**Main Power:**  
N/A



**CalPlus GmbH**  
Normannenweg 30  
20537 Hamburg  
Tel.: 040 3039595-0  
Fax: 040 3039595-50  
scopeshop@calplus.de  
www.calplus.de

**CalPlus GmbH - Zentrale**  
Heerstraße 32  
14052 Berlin  
Tel.: 030 214982-0  
Fax: 030 214982-50  
office@calplus.de  
www.calplus.de

