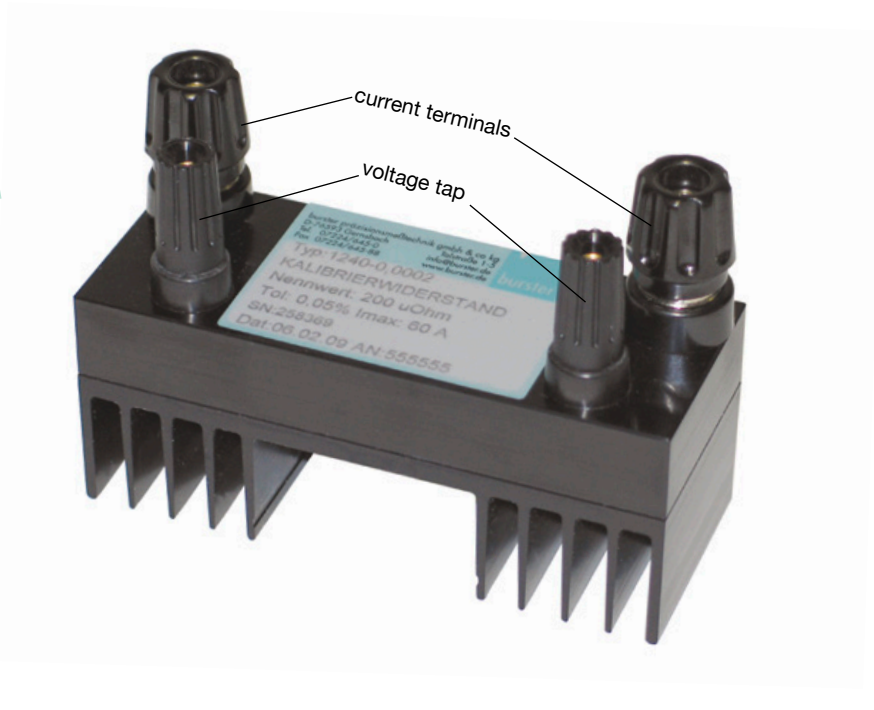




# Calibration Resistor

## Model 1240

With Certificate according to ISO 9000



1240 EN

- Low capacitance and low inductance design
- Suitable for direct current and technical frequencies
- High stability <math>\pm 0.01\%</math> over years

### Application

The 0.02 class calibration resistors excel in their modern design and small mechanical dimensions. Their ruggedness also ensures a long life.

Calibration resistors of the 1240 series are used wherever very constant operating standards are required. Typical main areas of application therefore include:

- ▶ When normal resistors prove to be too large scale
- ▶ For test and calibration of resistance measurement devices
- ▶ For tests on electrical temperature measuring equipment
- ▶ For laboratory setup of a Wheatstone bridge
- ▶ As shunt resistor for accurate current measurement
- ▶ As part of standard equipment in research laboratories
- ▶ For a large part of measurements in calibration laboratory

A test certificate according to ISO 9000 with detailed technical data is included in the scope of delivery of these high-quality calibration resistors.

### DKD/DAkKS Calibration Certificate

The calibration laboratory D-K-15141-01-00 at burster praezisionsmesstechnik gmbh & co kg is supervised by DAkKS (Deutsche Akkreditierungsstelle GmbH) according to ISO 17025.

It can prove its status by a certificate and is authorized to issue calibration certificates with the DAkKS logo and with the DKD logo (Deutscher Kalibrierdienst).

These calibration certificates are internationally approved by multilateral contracts.

### Manufacturer Calibration Certificate

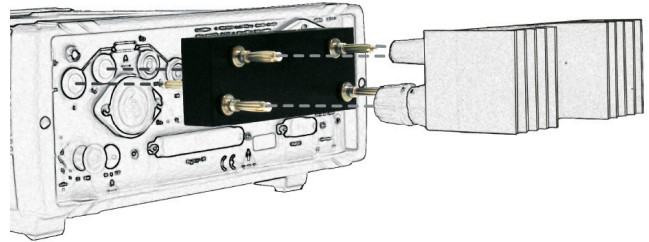
Please refer to DKD/DAkKS Calibration Certificate but with reduced accuracy. The calibration resistors can also be delivered with a manufacturer calibration certificate. It confirms the traceability of the used secondary voltage and resistance standards to the national standards according to DIN ISO 9000ff and is guaranteed by our certified calibration laboratory (D-K-15141-01-00)

## Technical Data

|   |  |
|---|--|
| Resistance material:                            | 25 $\mu\Omega$ ... 100 m $\Omega$ MANGANIN® sheet<br>200 m $\Omega$ ... 100 k $\Omega$ ZERANIN® wire |
| Temperature coefficient:                        | approx. $\pm 10$ ppm/K MANGANIN® sheet<br>approx. $\pm 2$ ppm/K ZERANIN® wire                        |
| Calibration temperature:                        | 23 °C $\pm$ 3 K (< 0.5 W load)   |
| Surface temperature:                            | max. 85 °C   |
| Thermal resistance:                             | 11 K/W   |
| Test voltage:                                   | 2900 VDC (resistance element-housing)  |
| Nominal insulation voltage:                     | 650 VDC (insulated mounting required)  |
| Insulation resistance:                          | > 100 M $\Omega$   |
| Specifications:                                 | according IEC 60477  |
| Dimensions 100 $\mu\Omega$ ... 100 K $\Omega$ : | (H x W x D) 97 x 38 x 61 [mm]  |
| 25 $\mu\Omega$ :                                | (H x W x D) 97 x 38 x 81 [mm]  |
| Weight 100 $\mu\Omega$ ... 100 K $\Omega$ :     | 250 g  |
| 25 $\mu\Omega$ :                                | 400 g  |

## Adapter model 2394

for the check-up and calibration of our resistance measurement devices models 2304 and 2316-V000X



| Model         | Resistance value* | Tolerance $\pm$ % | $R_L$                 | Resistivity material | Max. current in air | Nominal voltage at voltage taps | Storage stability typ./year |
|---------------|-------------------|-------------------|-----------------------|----------------------|---------------------|---------------------------------|-----------------------------|
| 1240-0.000025 | 25 $\mu\Omega$    | 1                 | $\leq 0.6$ m $\Omega$ | MANGANIN® sheet      | 60 A                | 1.5 mV                          | $< 4 \times 10^{-4}$        |
| 1240-0.0001   | 100 $\mu\Omega$   | 0.1               | $\leq 0.9$ m $\Omega$ |                      | 60 A                | 6 mV                            | $< 4 \times 10^{-4}$        |
| 1240-0.0002   | 200 $\mu\Omega$   | 0.05              | $\leq 0.8$ m $\Omega$ |                      | 60 A                | 12 mV                           | $< 4 \times 10^{-4}$        |
| 1240-0.0005   | 500 $\mu\Omega$   | 0.05              | $\leq 1.5$ m $\Omega$ |                      | 60 A                | 30 mV                           | $< 4 \times 10^{-4}$        |
| 1240-0.001    | 1 m $\Omega$      | 0.05              | $\leq 4$ m $\Omega$   |                      | 30 A                | 30 mV                           | $< 5 \times 10^{-5}$        |
| 1240-0.002    | 2 m $\Omega$      | 0.05              | $\leq 4$ m $\Omega$   |                      | 30 A                | 60 mV                           | $< 5 \times 10^{-5}$        |
| 1240-0.005    | 5 m $\Omega$      | 0.05              | $\leq 4$ m $\Omega$   |                      | 20 A                | 100 mV                          | $< 5 \times 10^{-5}$        |
| 1240-0.01     | 10 m $\Omega$     | 0.03              | $\leq 5$ m $\Omega$   |                      | 14 A                | 140 mV                          | $< 5 \times 10^{-5}$        |
| 1240-0.02     | 20 m $\Omega$     | 0.03              | $\leq 5$ m $\Omega$   |                      | 10 A                | 200 mV                          | $< 5 \times 10^{-5}$        |
| 1240-0.05     | 50 m $\Omega$     | 0.03              | $\leq 7$ m $\Omega$   |                      | 6 A                 | 300 mV                          | $< 5 \times 10^{-5}$        |
| 1240-0.1      | 100 m $\Omega$    | 0.02              | $\leq 8$ m $\Omega$   | ZERANIN® wire        | 5 A                 | 500 mV                          | $< 3 \times 10^{-5}$        |
| 1240-0.2      | 200 m $\Omega$    | 0.02              | $\leq 5$ m $\Omega$   |                      | 3 A                 | 600 mV                          | $< 2 \times 10^{-5}$        |
| 1240-0.5      | 500 m $\Omega$    | 0.02              | $\leq 5$ m $\Omega$   |                      | 2 A                 | 1 V                             | $< 2 \times 10^{-5}$        |
| 1240-1        | 1 $\Omega$        | 0.02              | $\leq 5$ m $\Omega$   |                      | 1.5 A               | 1.5 V                           | $< 1 \times 10^{-5}$        |
| 1240-2        | 2 $\Omega$        | 0.02              |                       |                      | 1 A                 | 2 V                             | $< 2 \times 10^{-5}$        |
| 1240-5        | 5 $\Omega$        | 0.02              |                       |                      | 0.7 A               | 3.5 V                           | $< 2 \times 10^{-5}$        |
| 1240-10       | 10 $\Omega$       | 0.02              |                       |                      | 0.5 A               | 5 V                             | $< 1 \times 10^{-5}$        |
| 1240-20       | 20 $\Omega$       | 0.02              |                       |                      | 0.35 A              | 7 V                             | $< 2 \times 10^{-5}$        |
| 1240-50       | 50 $\Omega$       | 0.02              |                       |                      | 0.2 A               | 10 V                            | $< 2 \times 10^{-5}$        |
| 1240-100      | 100 $\Omega$      | 0.02              |                       |                      | 0.15 A              | 15 V                            | $< 1 \times 10^{-5}$        |
| 1240-200      | 200 $\Omega$      | 0.02              |                       |                      | 0.1 A               | 20 V                            | $< 2 \times 10^{-5}$        |
| 1240-500      | 500 $\Omega$      | 0.02              |                       |                      | 70 mA               | 35 V                            | $< 2 \times 10^{-5}$        |
| 1240-1 k      | 1 k $\Omega$      | 0.02              |                       |                      | 45 mA               | 45 V                            | $< 1 \times 10^{-5}$        |
| 1240-2 k      | 2 k $\Omega$      | 0.02              |                       |                      | 20 mA               | 40 V                            | $< 2 \times 10^{-5}$        |
| 1240-5 k      | 5 k $\Omega$      | 0.02              |                       |                      | 14 mA               | 70 V                            | $< 2 \times 10^{-5}$        |
| 1240-10 k     | 10 k $\Omega$     | 0.02              |                       |                      | 10 mA               | 100 V                           | $< 1 \times 10^{-5}$        |
| 1240-20 k     | 20 k $\Omega$     | 0.02              |                       |                      | 7 mA                | 140 V                           | $< 2 \times 10^{-5}$        |
| 1240-50 k     | 50 k $\Omega$     | 0.02              |                       | 4 mA                 | 200 V               | $< 3 \times 10^{-5}$            |                             |
| 1240-100 k    | 100 k $\Omega$    | 0.02              |                       | 3 mA                 | 300 V               | $< 3 \times 10^{-5}$            |                             |

\*all resistors are incl. test certificate. Intermediate values are possible at extra charge

## Order Information

|                                      |                       |
|--------------------------------------|-----------------------|
| Calibration Resistor 100 m $\Omega$  | Order code 1240-0.1   |
| DKD/DAkS Calibration Certificate     | Order code 12DKD-1240 |
| Manufacturer Calibration Certificate | Order code 12WKS-1240 |

