High-Precision Resistance Decade

Model 1406
Model 1407

NEW
including DAkkS-Calibration Certificate

Application
The range of application for the high-precision resistance decades models 1406 and 1407 stretches from reference standard for precision measurements up to simulation of a host of measuring transducers. They can be used for control in complicated equipments and systems, such as equivalent circuit in resistor networks. Another application is the use in switching circuits, as reproducible variable in laboratory and test assemblies. The decade resistors meet all the requirements of these differing functions as well as the resulting demands.

Description
The high-precision resistance decades models 1406 and 1407 are designed to meet the highest demands with regard to precision, temperature and long-term consistency. Many years at experience, tried-and-tested technology and the use of field proven materials guarantee the high level of precision. The decade resistors consist of low-capacity and low inductance wire windings of MANGANIN®. The low temperature coefficient of this material, the low error tolerance of the resistors and the long-term stability achieved through careful artificial ageing are the guarantee for reliable conformity with the technical specifications for these decade resistors.

- Range model 1406 10 x 10 mΩ to 10 x 10 kΩ
- Range model 1407 10 x 100 mΩ to 10 x 100 kΩ
- Accuracy from 0.02 %
- Resistance material MANGANIN® TK ≤ 10 ppm/K
- Stability < 0.02 % resp.
Technical Data

Resistance ranges:  
- model 1406: 10 x 10 mΩ to 10 x 10 kΩ
- model 1407: 10 x 100 mΩ to 10 x 100 kΩ

Zero resistance of the complete resistance box: < 10 mΩ

Resistance tolerance: see table

Calibration: in Ohm absolute at 23 °C

Temperature coefficient: ≤ 10 ppm/K

Long-term stability: < 0.02 %

Power dissipation: 0.4 W per step = 4 W/decade

Operating voltage: 500 V max.

Test voltage: 2800 VDC

Design and construction: according to DIN EN 60477

Switching arrangement: short-circuiting between two neighbouring switch positions: 12, limited to 11 steps

Contact material: Ag plated on E-Cu, slider pack, solid silver

Operating moment: approx. 0.1 Nm

Dimensions (length by height by depth): 433 x 95 x 120 [mm]

Weight: approx. 2.8 kg

Order Information

Precision resistance decade including DAkkS Calibration Certificate  
- Model 1406
- Model 1407

Accessories

- Assembly set for 19” rack mounting  
  Model 1491
- Leather case  
  Model 1495

DAkkS Calibration Certificate

burster präzisionsmesstechnik is an accredited calibration laboratory entitled to perform calibrations within the accredited measurands and measurement ranges and to issue an internationally recognized DAkkS Calibration Certificate.

The Calibration Certificate shows the values for the resistance in 10 switch positions of each decade and the inherent relative uncertainty. As experience has shown, the relative uncertainty in the upper decades amounts to only 1/5 to 1/20 of the respective error tolerance. More precise knowledge of resistance values thus means a veritable increase in value of the instrument.

Order Code

14DKD-1406
14DKD-1407

Error tolerance, load

<table>
<thead>
<tr>
<th>Model 1406</th>
<th>Model 1407</th>
<th>Value</th>
<th>Tolerance</th>
<th>Max. Load Current [mA]</th>
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<td>± 5 %</td>
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<td>10 x 1 Ω</td>
<td>± 0.1 %</td>
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</table>

Housing

Dimensions given in mm