High-Precision Resistance Decade

Model 1406
Model 1407

Code:	1406 EN
Delivery:	4 weeks
Warranty:	24 months

NEW
including DAkkS-Calibration Certificate



1406 EN

- **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® TC ≤ 20 ppm/K**
- **Stability < 0.02 % resp.**

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 ot 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.
A specially developed precision stepping switch with high quality contact material and optimal brush construction guarantee very good reproducibility. The contacts are self-cleaning and virtually free of thermoelectric power. All 7 decade resistor stages are contained in an attractive sheet steel casing. The casing acts as screen against electromagnetic and electrostatic interference. It is conductively connected to the earth socket on the front panel. The decade resistor, designed for use on the work or laboratory bench, can also be installed in a 19"-rack using two angle brackets.

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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:		< 15 mΩ
Resistance tolerance:		see table
Calibration:		in Ohm absolute at 23 °C
Resistance material:		MANGANIN®
Temperature coefficient:		≤ 20 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**
Precision resistance decade including DAkkS Calibration Certificate	**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.

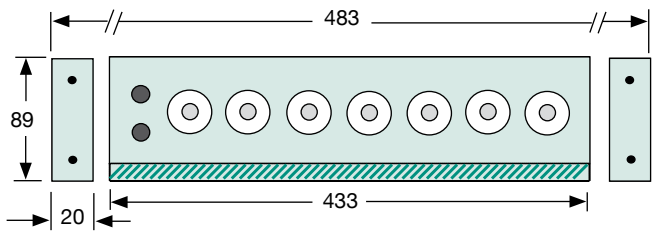
The Calibration Certificate shows the values for the resistance in 10 switch positions of each decade and the inherent relative uncertainty. As experience has shown, the relative uncertainty in the upper decades amounts to only 1/5 to 1/20 of the respective error tolerance. More precise knowledge of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

Order Code	**14DKD-1406**
	14DKD-1407

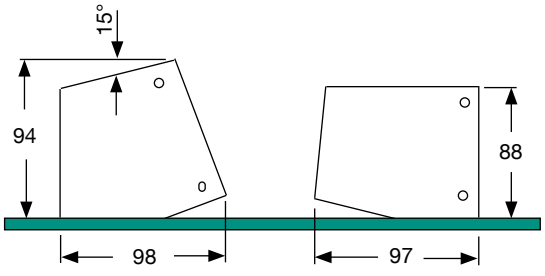
Error tolerance, load

Model 1406	Model 1407	Value	Tolerance	Max. Load Current [mA]
✓		10 x 0.01 Ω	± 5 %	2000
✓	✓	10 x 0.1 Ω	± 0.5 %	2000
✓	✓	10 x 1 Ω	± 0.1 %	600
✓	✓	10 x 10 Ω	± 0.05 %	200
✓	✓	10 x 100 Ω	± 0.02 %	60
✓	✓	10 x 1 kΩ	± 0.02 %	20
✓	✓	10 x 10 kΩ	± 0.02 %	6
	✓	10 x 100 kΩ	± 0.02 %	2

Housing



Dimensions given in mm



top desk application built-in application