

Computer Controlled High Precision Resistance Decade

Model 1427

Code:	1427 EN
Delivery:	4 weeks
Warranty:	24 months



1427 EN

- Resistance range from 1.00000 Ω to 1.200000 M Ω
- Error tolerance 0.003 %
- Temperature coefficient < 1 ppm/K
- Simulation of RTD (Pt, Ni), Error tolerance 0.02 °C
- RS232 (IEEE488 optional) / USB converter

Application

In its function as temperature simulator the decade offers the choice of sensors like Pt 100, Pt 200, Pt 500, Pt 1000, Ni 100 and Ni 1000 in the range from -200 °C up to +850 °C. The temperature is entered via keyboard or data interface. The corresponding resistance appears at the output socket in two, three or four wire method.

Description

The resistance decade allows a direct choice of resistances between 1 Ω and 1.2 M Ω . Depending on the ohm value the resolution can be chosen up to 0.00001 Ω . The selected resistance can be picked up via two or four wire method.

The LCD display informs about chosen resistance or temperature, sensor type and control status.

Technical Data

Resistance range:	1.00000 Ω ... 1.200000 MΩ	
Resolution:	10 μΩ at 1 Ω	
Temperature coefficient:	< 1 ppm/°C (1 Ω ÷ 2000 Ω) four wire port < 1 ppm/°C (100 Ω ÷ 1.2 MΩ) two wire port < 5 ppm/°C (2 kΩ ÷ 10 kΩ) four wire port	
Max. load:	0.3 W	
Max. voltage:	50 V	
Range Pt sensor temperature simulation:	- 200 °C ... + 850 °C	
Range Ni sensor temperature simulation:	- 60 °C ... + 300 °C	
Sensor models:	Pt 10 ... Pt 10000, Ni 10 ... Ni 10000	
Temperature scales:	IPTS68, ITS90	
Pt sensor standard:	DIN (1,385), US (1,392)	
Ni sensor standard:	DIN 43760 (6180)	
Connection:	2, 3, 4 wire	
Remote control:	RS232, optionally IEEE488	
Temperature range:	reference temperature 18 °C ... 28 °C operating temperature 5 °C ... 40 °C storage temperature - 10 °C ... 50 °C	
Supply:	100 - 240 V / 50 - 60 Hz	
Dimensions [W x H x D]:	247 mm x 106 mm x 390 mm	
Weight:	6.5 kg	

Order Information

High precision resistance decade with RS232	Model 1427-V100
High precision resistance decade with IEEE488	Model 1427-V200
Montage set for 19"- 3HE rack mounting	Model 2316-Z001

DKD Calibration Certificate

DKD Calibration Certificate for model 1427

Order Code

14DKD-1427

Error tolerance for 4 wire connection

Resistance range	Error tolerance
1 Ω ... 400 Ω	0.003 % + 3 mΩ
400 Ω ... 2000 Ω	0.005 %
2000 Ω ... 10000 Ω	0.015 %

Error tolerance for 2 wire connection

Resistance range	Error tolerance
1 Ω ... 2000 Ω	0.005 % + 10 mΩ
2 kΩ ... 200 kΩ	0.005 %
200 kΩ ... 1,2 MΩ	0.01 %

Error tolerance Pt sensor simulation

Temperature	Pt100	Pt200	Pt500	Pt1000	Pt10000
- 200 °C ... 200 °C	0.02 °C	0.02 °C	0.02 °C	0.04 °C	0.04 °C
200 °C ... 500 °C	0.03 °C	0.04 °C	0.06 °C	0.1 °C	0.06 °C
500 °C ... 850 °C	0.04 °C	0.06 °C	0.15 °C	0.2 °C	0.1 °C