Electronics with the Modular System

Basic Electronic Circuits

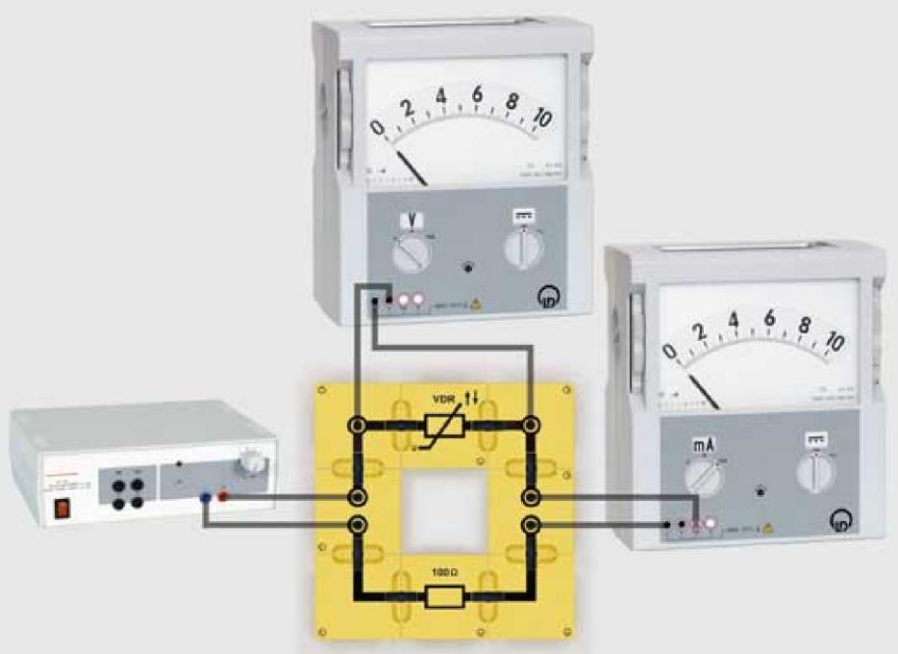
Special resistors

Voltage-dependent resistor

Objective of the experiment

To investigate the dependence of a VDR on the applied voltage.

Setup



Apparatus

1	539 023	VDR resistor, BST
1	539 009	Resistor 100 Ω, BST
2	539 003	Connector blocks BST, straight, 2 sockets
2	539 004	Connector blocks BST, 90° angle
2	539 005	Connector block, BST, 90° angle, 1 socket
8	539 000	Bridging plug, BST
2	531 906	Demo multimeter, passive
1	521 49	Power supply, 12 V DC, 230 V
6	500 644	Safety connection lead, 100 cm
1	301 300	Demonstration experiment frame
1	301 301	Adhesive magnetic board

BST 2012-02-24

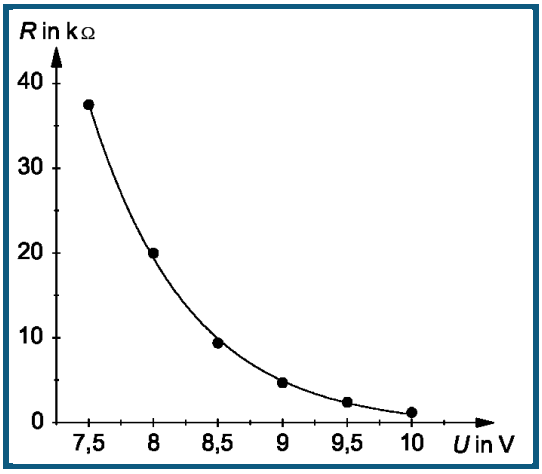
Carrying out the experiment

- Set up the circuit.
- Increase the voltage *U* (starting at 7.5 V) in 0.5 V increments and read the current *I* from the demo multimeter at each interval.
- Calculate the resistance *R* from *U* and *I* and enter it into the table.

Measuring example

Voltage *U* / V	Current *I* / mA	Resistance *R* / kΩ
7,5	0,2	37,5
8.0	0.4	20.0
8.5	0.9	9.4
9.0	1.9	4.7
9.5	3.9	2.4
10	8.2	1.2

Evaluation



A VDR is a voltage-dependent resistor.

The resistance *R* of a VDR decreases when voltage *U* increases.

The relationship between resistance *R* and voltage *U* is not linear (the resistance *R* decreases exponentially with the applied voltage *U*).