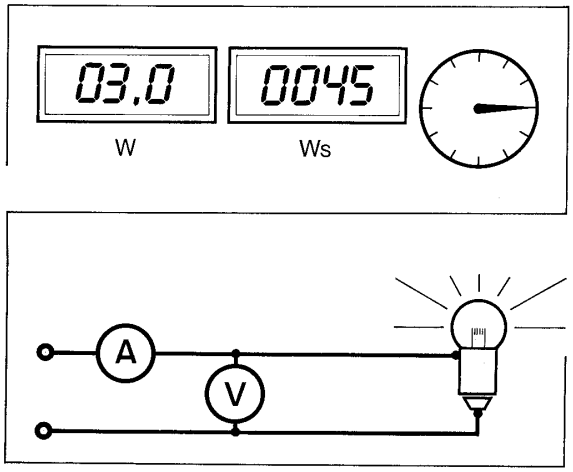
PHYWE

W. Krug / R. Butt

HANDBOOK

Electrical Energy and Power



All experiments in this handbook can be performed with the "Work and power meter No. 13715.93" which has the following specific features:

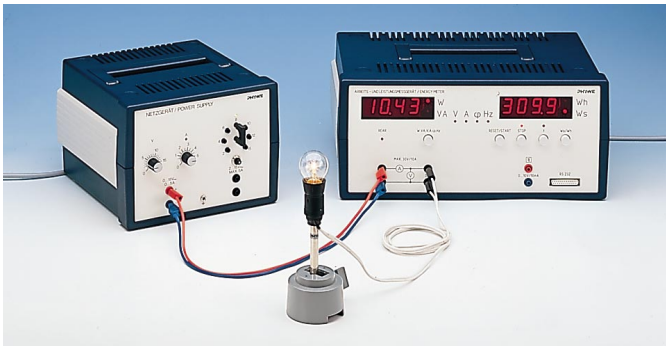
The work and power meter is designed for simultaneous measurement and display of electric power and work in direct and alternating current circuits.

This unit is particularly suited for introductory experiments to show the relation between voltage, current intensity, time, power and energy as well as to determine the efficiency during energy transformations.

In alternating current circuits, effective and virtual power can be measured and the relation between these magnitudes and voltage, current intensity and phase angle can be calculated.

Power and energy consumption can also be determined.

This HANDBOOK can be purchased separately. It contains the experiments listed below. Please ask for a complete equipment list. Ref No 24601



Ohmic and non-Ohmic consumers (AL 1.3)

Handbook • Electrical Energy and Power • No. 01187.02 • 29 described Experiments

AL 1.1 (12030)
Electrical power

AL 1.2 (12031)
Electrical work

AL 1.3 (12032)
Ohmic and non-Ohmic consumers

AL 2.1 (12033)
Transformation of electrical energy into light

AL 2.2 (12034)
Basic equation of thermodynamics

AL 2.3 (12035)
Electrical and potential energy

AL 2.4 (12036)
Efficiency of a motor-generator system

AL 2.5 (12037)
Electrical power of a bicycle dynamo as a function of RPM

AL 2.6 (12038)
Energy content in a dry battery

AL 2.7 (12039)
Effeciency of Ni-CD accumulators

AL 2.8 (12040)
Energy input when charging a capacitor

AL 2.9 (12041)
Determining the Faraday constant through electrolysis

AL 2.10 (12042)
Rheostatic braking of an electric motor

AL 3.1 (12043)
Short-circuit current and open-circuit voltage of a solarbattery

AL 3.2 (12044)
Solar battery responce to loading

AL 3.3 (12045)
Electrical power of a solar battery

AL 4.1 (12046)
Maximum value and effective value of alternating voltage

AL 4.2 (12047)
Influence of an iron core on the efficiency of a transformer

AL 4.3 (12048)
Characteristic curve of transformer power

AL 4.4 (12049)
Use of coil as impedance

AL 4.5 (12050)
Use of capacitor as impedance

AL 4.6 (12051)
Capacitive and inductive resistance

AL 5.1 (12052)
Effeciency of electrically operated cooking devices

AL 5.2 (12053)
Energy use of household appliances

AL 5.3 (12054)
Phase shift of an electric motor

AL 6.1 (12055)
Power and energy of a filament lamp

AL 6.2 (12057)
Characteristic curve of a solar battery

AL 6.3 (12058)
Impedance of capacitors

AL 6.4 (12059)
Phase shift with coils and capacitors