

Flat Coil in a Rotatable Frame

Flat coil in a plexiglas frame, mounted so that it can be rotated, for use in combination with 300 mm Helmholtz coils (P-1000906). When the flat coil is rotated in the magnetic field of the Helmholtz coils, an alternating voltage is induced. The electrical connection to the coil is established via sliding contacts. A hand crank and pulley on the rotary frame's axle are used to drive the coil.

Number of turns: 4000
Effective area: 42 cm²
Dimensions: approx. 110x80x11 mm³
Weight: approx. 360 g

P-1013131

Additionally required:

P-1000906 Helmholtz Coils, 300 mm

P-1003073 Analogue Multimeter AM50

P-1003312 DC-Power Supply Unit 0 – 20 V, 0 – 5 A (230 V, 50/60 Hz)

or

P-1003311 DC-Power Supply Unit 0 – 20 V, 0 – 5 A (115 V, 50/60 Hz)



Helmholtz Coils 300 mm

Pair of coils with large diameter in Helmholtz configuration used to produce a homogeneous magnetic field. The coils can be switched in parallel or in series. A spring clip on the top crossbar is used to mount the Hall sensor during measurements of the magnetic field.

Coil diameter: approx. 300 mm
Number of turns per coil: 124 each
DC resistance: 1.2 Ω each
Maximum coil current: 5 A each
Terminals: 4 mm safety sockets
Weight: 4.1 kg approx.
Max. field: 3.8 mT

P-1000906

Additionally recommended:

P-1000558 Magnetic Field Sensor



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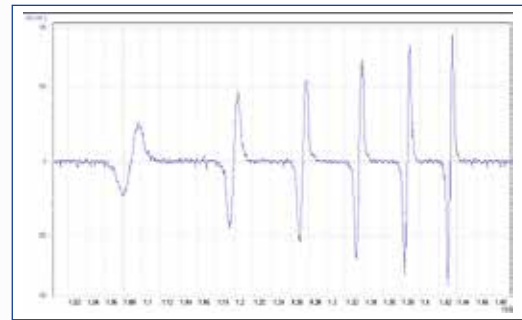


Tube with Six Induction Coils

Plastic tube with six identical induction coils connected in series. When the bar magnet provided is allowed to fall through the tube, a voltage is induced in each of the coils in turn. As the velocity of the magnet increases with time during its fall, the amplitudes of the voltage peaks also increase, and their width decreases. The area under each voltage peak remains constant.

Coil width: 10 mm
Distance between coils: 190 mm
Dimensions: approx. 1500 mm x 20 mm diam.
Weight: approx. 500 g

P-1001005

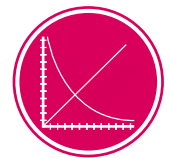


The induced voltage as a function of time

P-1001005



**P-1000540
P-1000539**



UE3040100
PDF online

Demonstration Dynamo

This model dynamo demonstrates the conversion of mechanical energy into electrical energy. All working parts of the electric motor are clearly visible. The motor is mounted on a base plate and coupled by a rubber belt to a hand-drive pulley. External connection is via 4 mm sockets with a light emitting diode acting as an output indicator. The magnetic field is provided by a permanent magnet.

Base plate: 200x100x20 mm³
Hand-drive pulley: 150 mm diam.
Height: 180 mm

Contents:

- 1 Apparatus on base plate
- 1 Removable magnet
- 1 Stackable light emitting diode
- 1 Small dynamo pulley

P-1003252



P-1003252