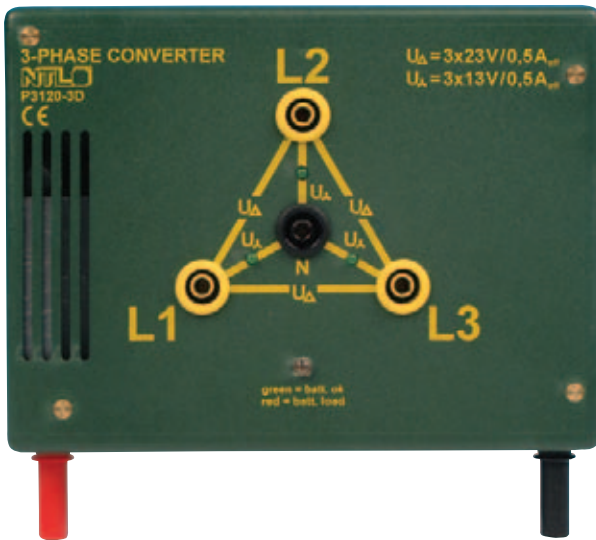




three-phase current



P3120-3D Three-phase converter "inno"

When combined with 6 V/10 Ah "inno" rechargeable battery P3120-1B or "inno" fixed-voltage transformer P3120-1N using plug-in connectors, serves as a three-phase power supply - requires no three-phase mains connection!

Technical data:

Output: four 4-mm safety jacks, permanently protected against short circuiting, 3 x 23 Veff, 500 mA, 70 Hz (in a delta connection), 3 x 13 Veff, 500 mA, 70 Hz (in a star connection)

3-mm LEDs indicate power supply status

Power supply: 6 ... 15 V DC, stabilized, min. 5 A

Case: green ABS plastic with yellow labelling

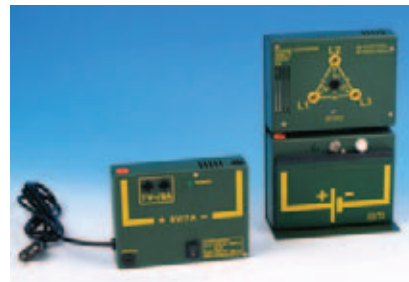
Dimensions: approx. 160x120x45 mm; weight: approx. 570 g

Recommended power supply:

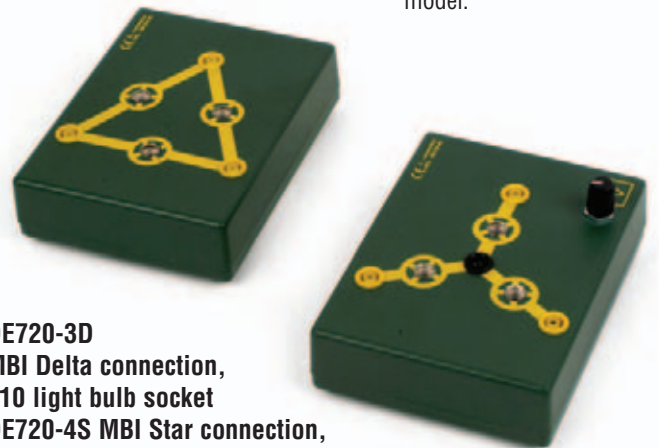
P3120-1N fixed voltage transformer "inno" or P3120-1B 6 V/10 Ah rechargeable battery "inno"



Experiment: Star connection - amperage at the star point (magnetic panel assembly)



Use: When used with the 6 V/10 Ah rechargeable battery or fixed-voltage transformer "inno", the "inno" three-phase converter can be mounted on the L-shaped assembly platform P3120-4A (height: 240 mm), easily converting it into a table model.



DE720-3D

MBI Delta connection,

E10 light bulb socket

DE720-4S MBI Star connection,

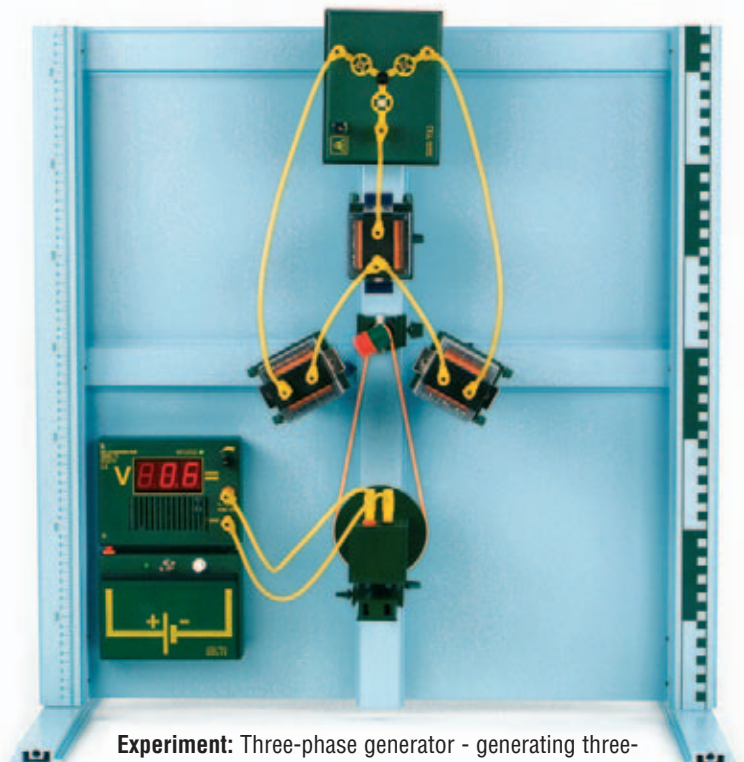
E10 light bulb socket

Dimensions of each MBI ("inno" magnetic module): approx. 160x120x45 mm

Not shown:

DE309-5S Light bulb, 12 V/100 mA, E10, set of 5

DE309-6S Light bulb, 24 V/100 mA, E10, set of 5



Experiment: Three-phase generator - generating three-phase current (assembly panel, support stand side)

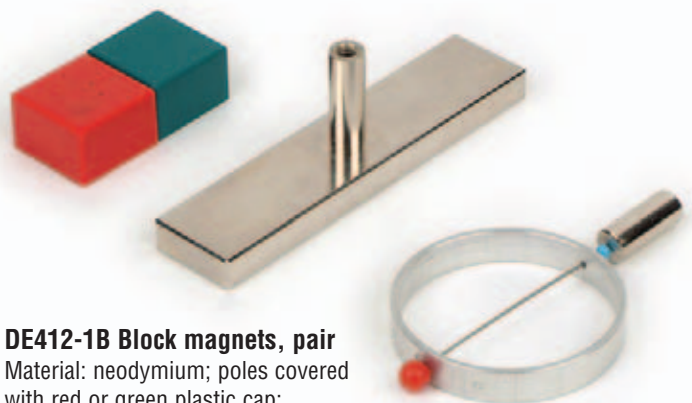
three-phase current



Experiment: Principle of the three-phase synchronous motor



Experiment: Principle of the three-phase asynchronous motor

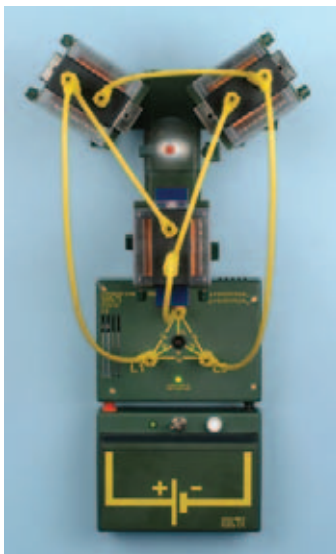


DE412-1B Block magnets, pair

Material: neodymium; poles covered with red or green plastic cap; M6 tapped hole on the side; Dimensions: 28x28x18 mm

DE411-1S Yoke on support, 120x28x10 mm

DE454-3A Aluminium ring, pivoting, on support, D=60 mm



Experiment: Three-phase asynchronous motor (magnetic panel assembly)



Experiment: Three-phase asynchronous motor (table assembly)

DE454-1R Ring with bearing hole

For displaying a rotating magnetic field; pivots on base-mounted bearing pin DE300-1N; ring diameter: 48 mm

DE454-1M Magnetic needle for rotating field

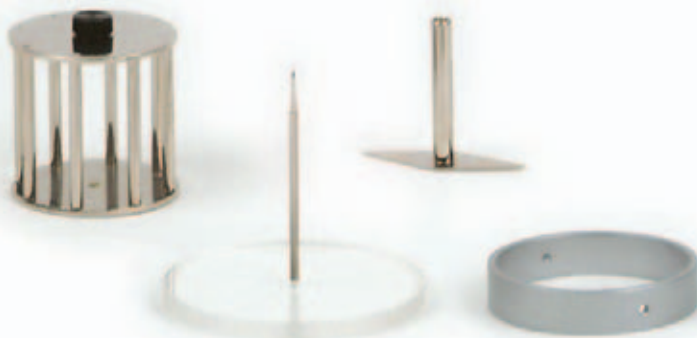
For illustrating a three-phase rotating field and the three-phase synchronous motor; pivots on base-mounted bearing pin DE300-1N; Length: 40 mm

DE454-1K Squirrel cage

Model of a squirrel-cage rotor and for demonstrating how a three-phase asynchronous motor works; pivots on base-mounted bearing pin DE300-1N
Height: 45 mm; diameter: 40 mm

DE300-1N Bearing pin on base

Steel pin on an acrylic base, for rotatable mounting of the ring with bearing hole, the magnetic needle for rotating field and the squirrel cage





three-phase current



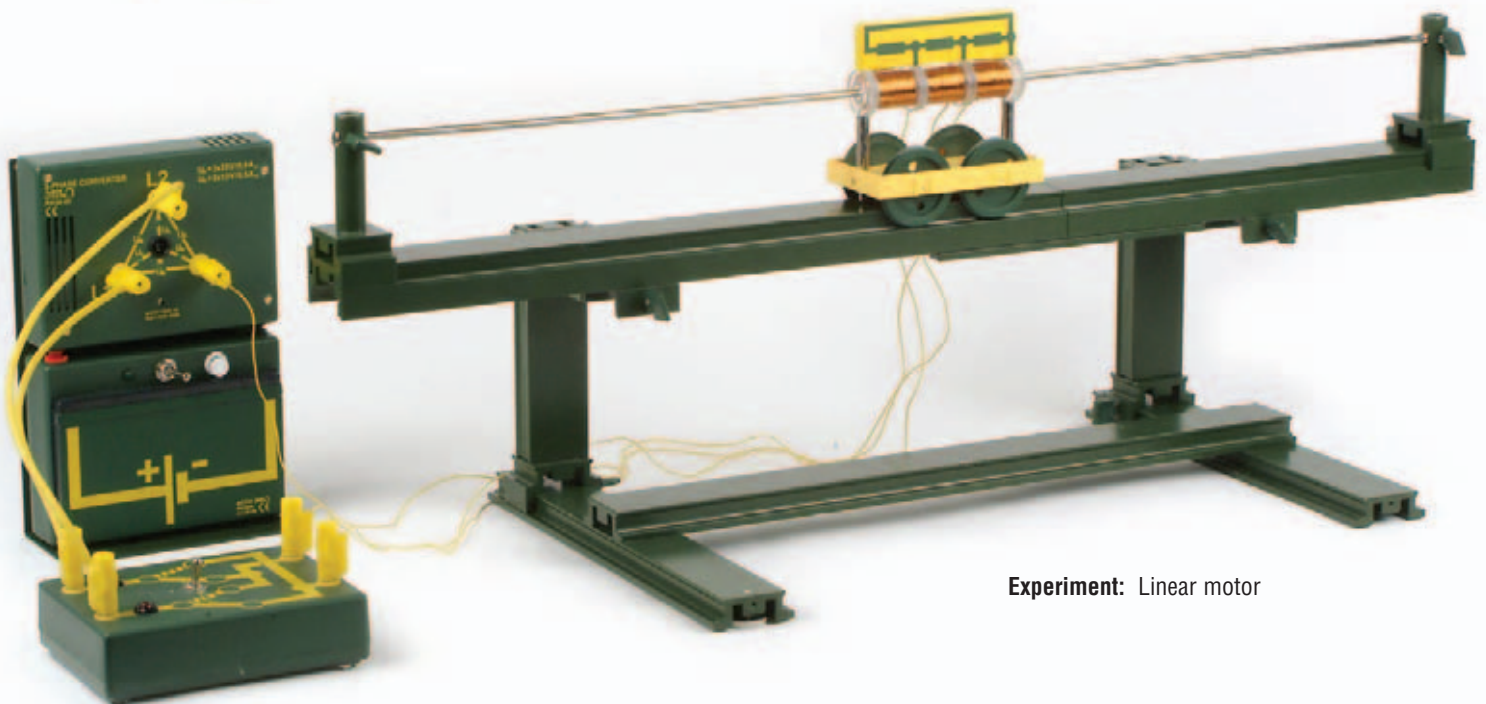
DE453-4L Coil accessory for linear motor

For demonstrating how a linear motor works; including coil body (L=115 mm, D=30 mm), winding, terminals and three lightweight connecting leads (L=approx. 100 cm) with 4-mm safety plugs; two 4-mm plug pins for mounting on demo trolley DM300-2A

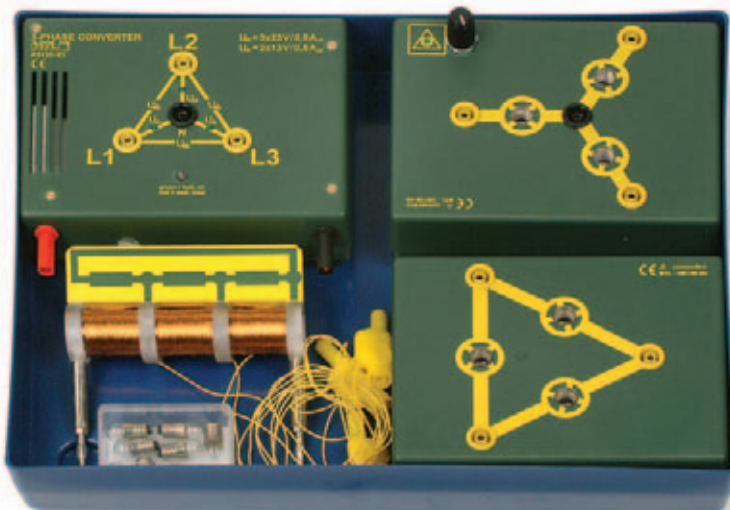
DE453-5L Iron rod, segmented, L=810 mm

Two joinable iron rods, nickel-plated; diameter at joining end 10 mm, 810 mm total length, D=5 mm

DM300-2A Dynamics trolley, demo



Experiment: Linear motor



DE716-10 Electricity set 10, three-phase current "inno"

consisting of:

- | | | |
|----------|----|--|
| DE720-3D | 1x | MBI Delta connection, E10 light bulb socket |
| DE720-4S | 1x | MBI Star connection, E10 light bulb socket with built-in amplifier |
| DE309-5S | 1x | Light bulb, 12 V/100 mA, E10, set of 5 |
| DE309-6S | 1x | Light bulb, 24 V/100 mA, E10, set of 5 |
| DE453-4L | 1x | Coil accessory for linear motor |
| DE453-5L | 1x | Iron rod, segmented, L=810 mm |
| P3120-3D | 1x | Three-phase converter "inno" |
| P7806-1A | 1x | Storage box, small |

Dimensions of each MBI ("inno" magnetic module): approx. 160x120x45 mm



three-phase current



P3130-3A Three-phase low-voltage transformer, "demo"

Low-voltage source of three-phase current providing two different levels of phase-to-phase and phase-to-ground voltage (star, delta); overload protection by means of thermal cut-outs (over-current protection switch)

Output terminals:

6 V/10 V, three phase, max. 4 A, and 23 V/40 V, three phase, max. 4 A

Galvanic separation from mains source; output voltage supplied by 4-mm safety jacks; ABS plastic case with two recessed handles and yellow labelling

Voltage source: 230/400 V
three-phase current/50 ... 60 Hz
Dimensions: 260x150x210 mm
Weight: 7.1 kg

P3135-3F Three-phase generator with digital display, "demo"

Powerful three-phase function generator featuring digitally synthesized output, low distortion and perfect relative shifting of output phases, regardless of the frequency and type of load; requires no three-phase mains connection!

Technical data:

Output:

Star: 3 x 23 Veff, max. 1 A, 1.4 As (peak)

Delta: 3 x 40 Veff, max. 1 A, 1.4 As (peak)

Frequency range: 0.01 ... 1000 Hz in five sub-ranges

Digital display: LED frequency display; digit height: 26 mm

Waveforms: sine, triangle, square and sawtooth

Overload protection: all output terminals are permanently protected against short circuiting and stable against inductive charge

Voltage source: 24 V AC, min. 6 A

Dimensions: 260x150x210 mm; weight: 3.0 kg



Experiments on the topic of:
THREE-PHASE CURRENT

DE716-1SE Experiment manual "Three-Phase Current", b/w booklet
DE716-1CE Experiment manual "Three-Phase Current", CD-ROM

- ETI 001 Three-phase-current generator - generating three-phase current
- ETI 002 Three-phase current - measuring voltage
- ETI 003 Star connection - amperage at the star point
- ETI 004 Delta connection
- ETI 005 Principle of the three-phase synchronous motor
- ETI 006 Three-phase synchronous motor
- ETI 007 Principle of the three-phase asynchronous motor
- ETI 008 Three-phase asynchronous motor
- ETI 009 Linear motor



Use: Three-phase generator with digital display - power supplied by variable transformer P3130-3A

