

PowerPro Electromagnetic

inspire

- ▶ Output voltage: 1-0-1 V ac, 2 V dc
- ▶ Current output: 10A maximum (combined ac/dc)
- ▶ Designed to tolerate short circuits
- ▶ Shrouded sockets
- ▶ Designed specifically for use in school/college laboratories
- ▶ Detachable IEC mains lead
- ▶ Stackable metal case with integrated ABS carry handles
- ▶ **18 month manufacturer's warranty**

CE & CSA Certification
to BSEN61010-2010
(EN 61010-1:2010 3rd Edition)



DOUBLE PROTECTION:

- ▶ Slow blow fuse on mains input
- ▶ Split bobbin transformer with internal resettable fuse

POWERPRO ELECTROMAGNETIC POWER SUPPLY

Ideal for investigating magnetic fields where high currents are required at low voltage, e.g. for electromagnets, simple coils, solenoids and motors.

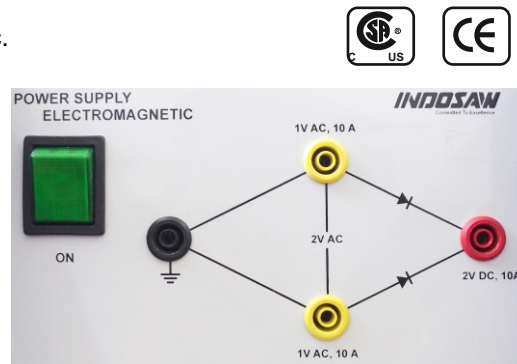
Outputs

The unit provides 1-0-1 V ac and 2 V dc.

The short circuit current at either output is 10 A. If ac and dc outputs are used at the same time the maximum total current is 10 A.

Outputs can be short circuited.

The dc output is full-wave rectified but unsmoothed.



Applications

Typical experiments where a standard power supply would trip include:

- ▶ detection of the magnetic field around a straight wire
- ▶ investigation of the field produced by a single coil of wire
- ▶ investigation of the field inside and around a solenoid
- ▶ force on a conductor accessory (see below)
- ▶ powering a simple demonstration motor
- ▶ testing the lifting capacity of an electromagnet

Caution

High currents flowing in wires and coils will generate significant heat. Be aware and allow time for wires and coils to cool before touching them.

Power input : 40 VA
Dimensions : 250 x 265 x 135 mm
Weight : 4.3 kg

Operating temperature range: 5°C to 40°C
Operating humidity range: upto 80% RH
For Indoor use only

Force on a conductor accessory

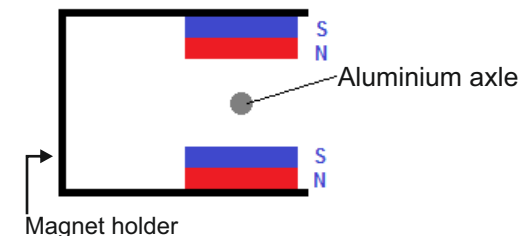
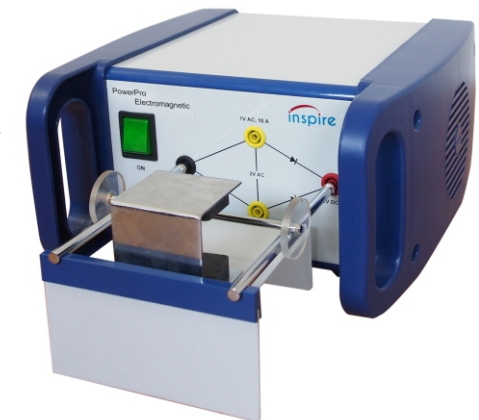
This accessory (available separately) illustrates the interaction between an electric current and a magnetic field.

A pair of metal rails with 4 mm plugs at their ends connect directly to the dc output of the Electromagnetic power supply. The rails are supported as shown to keep them approximately level.

A lightweight aluminium axle with discs at its ends can roll along the rails, making electrical contact with them.

The rail support includes a platform on which the C-shaped magnet holder can be placed. The two magnets must be arranged so that they are separated and attracting, i.e. North facing South.

When a current flows, the axle is subjected to an outward or inward pull depending on the direction of the magnetic field. This is known as the motor effect and illustrates Fleming's left hand rule.



Fuse Replacement

The mains socket on the back panel has a compartment for two fuses. It can be opened using a flat bladed screwdriver as shown. The front fuse is a spare. It is a 5 x 20 mm time delay or "slow blow" T-0.315A 250 V fuse.



IEC mains lead

This is protected by a standard T-3A 250V fuse in the mains plug.

WEEE directive

This symbol indicates that the electronic equipment should not be disposed of in the normal waste. It should be recycled in accordance with the WEEE directive.

