

## Force Between Conductors Demonstrator

- **Convincing demonstration of a basic electromagnetic phenomenon**
- **Enclosed power supply and momentary switch for safety**
- **Simple, clear arrangement of the electric circuit**

A basic property of electromagnetism is the mechanical force which exists between two neighboring, current-carrying conductors. However, observing the small force with simple conductors requires large currents.

The Force Between Conductors Demonstrator offers a simple, direct method for accomplishing this usually difficult and often unsatisfying demonstration. The device consists of a metal frame which supports two long straight conductors that can pivot about vertical axes. The base of the frame contains a power supply to energize the conductors.

Voltage can be applied to the conductors in various configurations - series or parallel, same sense or opposite sense - by connecting the supplied heavy duty cords to the appropriate binding posts. Two adjustable indicator arrows show the direction of the current in each conductor.

After the connections are made, a pushbutton applies the voltage, allowing a large current to flow momentarily in the conductors. The conductors swing either towards each other or apart and their movement indicates the generation of a magnetic force between them and its direction.

### Specifications

- Conductors:** Thin wall brass tubes with copper end pieces.  
Length: 39.5cm, lever arm: 2.5cm  
Cold resistance (each): Approx. 0.013Ω
- Power supply:** Input: 110VAC/60 Hz, 345W (max., - operate for < 5 seconds)  
Output: Operating voltage 0.5–1.5 Vdc  
Approx. operating currents: 55A in series, 2 x 37A in parallel  
Fuse: Miniature fuse, 250V/3A
- Dimensions:** Height: 56.5cm, base diameter 19cm  
Weight: 4.25 kg



Force Between Conductors Demonstrator shown with parallel connection yielding currents traveling upward.



Force Between Conductors Demonstrator shown with anti-parallel connection yielding currents traveling clockwise.

Item No.	Description
FBCD01	Force Between Conductors Demonstrator

