



### Description :

The DC Series is a specialized training platform designed for low-voltage, high-safety engineering experiments. By utilizing a 100W DC Motor, this unit allows for highly stable RPM control, making it the ideal tool for students to study the precise relationship between DC drive power and electromagnetic braking torque.

### Core Components & Features

Drive Motor: 100W High-Torque DC Motor (12V Operation).

Speed Controller: Integrated 12V PWM RPM Regulator with a high-precision potentiometer dial.

The Brake: Industrial 12V/24V Electromagnetic Friction Brake.

The Load Wheel: Machined steel flywheel to maintain momentum for braking analysis.

Power Supply: Integrated AC-to-DC 12V Transformer (allows plugging into a standard wall outlet).

Metering: Dual Digital Volt/Amp meters for both the Motor and the Brake.

Safe Low-Voltage Operation: Entire system runs on 12V DC, eliminating high-voltage risks in the classroom.

Ultra-Smooth Regulation: The RPM regulator allows for "crawl speeds" (below 10 RPM) up to full speed for diverse testing.

Simultaneous Monitoring: Users can monitor exactly how much current the motor consumes to overcome the resistance of the electromagnetic brake.

Compact Benchtop Design: Portable and lightweight

### Experimental Capabilities

- Power Balance Equation: Calculate the efficiency of the motor versus the resistance of the brake.
- PWM Duty Cycle Analysis: Study how changing the pulse width of the motor signal affects torque.
- Emergency Stopping Distance: Measure the time required to stop the 100W load at various current levels in the brake coil.

### Feature Specification

- **Motor Power** 100 Watts
- **Input Voltage** 12V DC (via 110/220V AC Adapter)
- **Speed Control** PWM Regulation (0% – 100% Duty Cycle)
- **Brake Type** Electromagnetic Friction Plate (12V DC)
- **Shaft Diameter** 10mm – 12mm Stainless Steel
- **Base Plate** High-density Acrylic or Anodized Aluminum
- **Display** LED/LCD for Voltage, Current, and RPM

Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.



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