



A PMDC (Permanent Magnet DC motor) is a kind of DC motor that includes a permanent magnet rather than field winding to form the magnetic field necessary for the DC motor operation. The PMDC motor is one of the most preferred motor for the electric vehicle application due to its traction characteristics such as high starting torque, high power density and good efficiency.

46992 PMDC Machine Trainer is an important and exclusively designed product for electrical laboratories. PMDC Machine is an important part of Electrical Engineering Syllabus considering upgraded technologies.

This product plays a vital role in letting the students have a basic knowledge about the operating principle of PMDC machine. It provides complete learning contents to enhance practical knowledge and explains students the fundamental concepts of PMDC Machine.

### Applications



Note: Specifications are subject to change.

### Features

- Heavy Duty Base/Channel.
- Designed by considering all the safety standards.
- Diagrammatic representation for the ease of connections.
- Machine with Mechanical Loading Arrangement.
- Provided with Digital Tachometer.
- Motor Assembly Mechanical Arrangement for Experiments.

### Experiments

- Explain working and Construction of PMDC Motor.
- Describe Speed Control of a PMDC Motor by using PWM, also Measure PWM Signal on DSO.
- Draw N-T (Speed -Torque) characteristic of PMDC Motor.
- Perform running, reversing operation in a PMDC motor.

### Technical Specifications

#### DC Machine

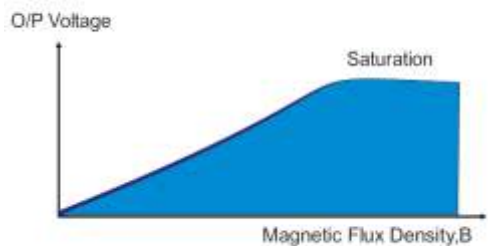
Type	: PMDC Motor
Rating	: 1HP
Voltage Rating	: 180V $\pm$ 10%
Speed	: 1500RPM $\pm$ 10%
Loading Arrangement	: Mechanical
Break Drum/Pulley	: Aluminum Cast

#### On board Digital Panel Meters

DC Voltmeter (1 nos)	: 0-500V
DC Ammeter (1 nos)	: 0-20A
Digital RPM Meter (0-9999 rpm)	: 1 nos.
DC Drive	: 0-180V (variable),
	: Inside of Trainer
Inter connection	: 4mm Patch cord
Spring Balance	: 2nos.



Graph between RPM VS Frequency

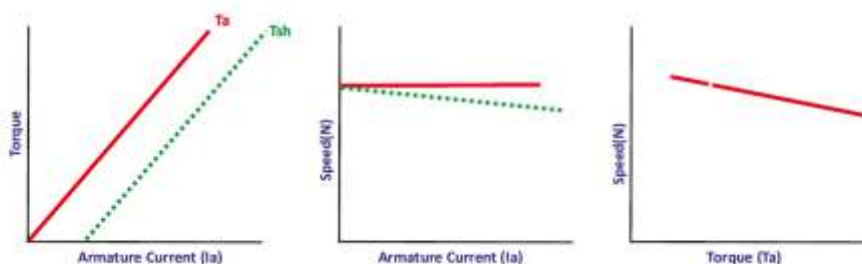


Hall Effect Sensors output response

### Waveforms

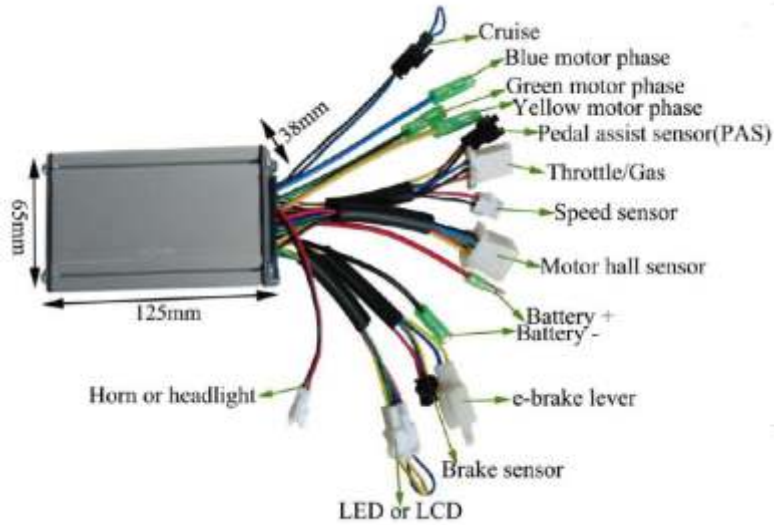


Average Voltage for PWM Waveform

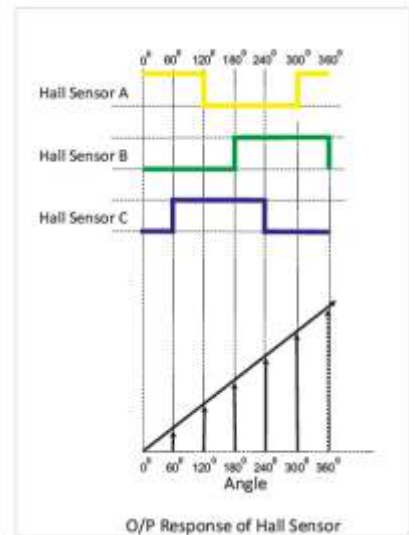
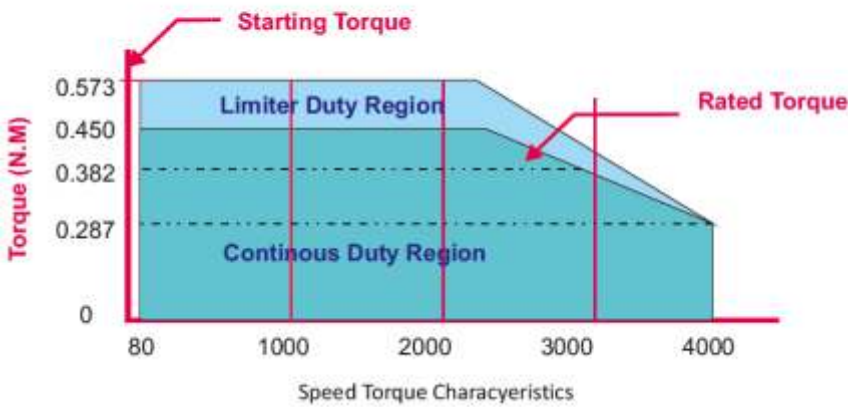
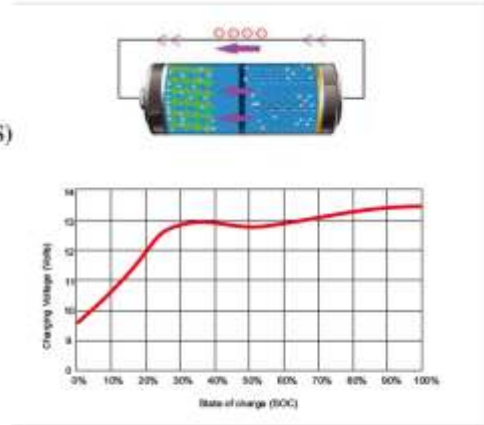


Characteristics of PMDC Motor

Note: Specifications are subject to change.



Functions of Motor Control

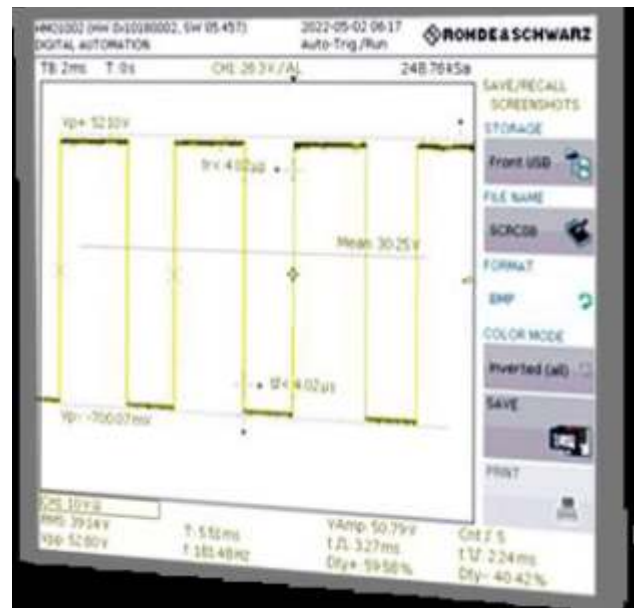
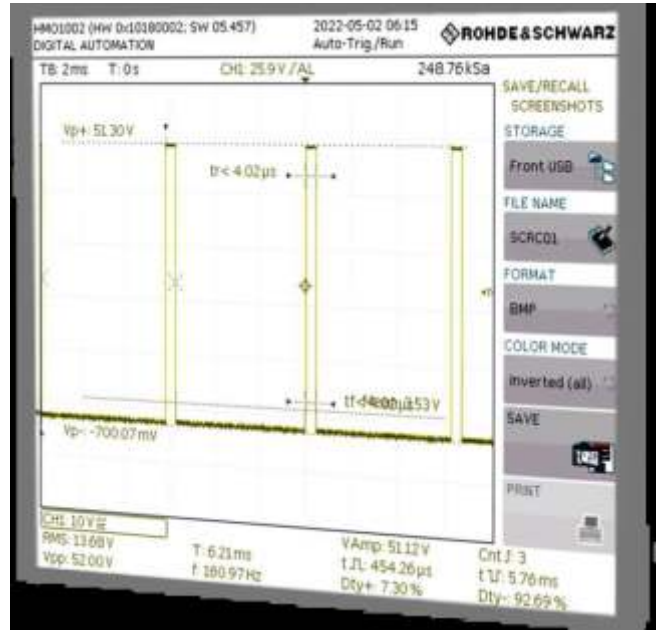
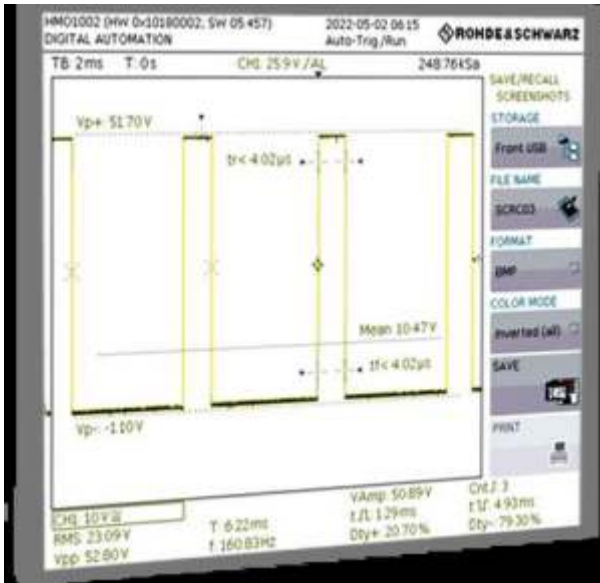


**Accessories**

- Operating Manual-1nos.
- Patch Cord-10 nos.
- Wall poster with attractive study content - 2Qty.
- Mains Cord-01 nos.

Note: Specifications are subject to change.

**Real Time signal Images of PWM**



Note: Specifications are subject to change.