

## DC Motor Training System DCMTS



### Key Features:

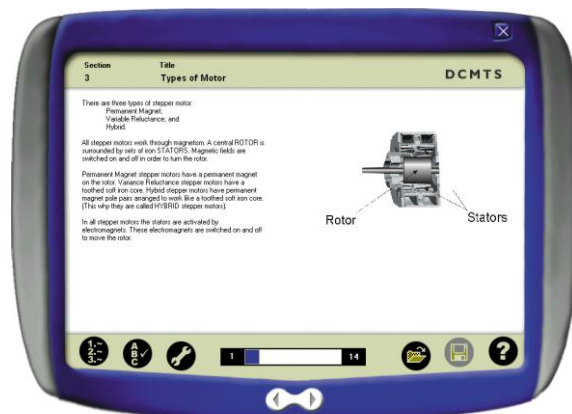
- Introduction to DC Motor control
- Manual or computer control
- Self-contained unit
- Tutorial software
- Question and answers for each section of the tutorial software
- Open and closed loop control
- Can be used as a target application for programming software
- Easily interfaced to PC through USB

The DC Motor Training System (DCMTS) is a PC based system used to teach the principles and operations of DC motors. The DCMTS can be controlled by both open and closed loop control modes, a requirement in understanding electronic control systems. The system comprises of a DC motor with potentiometer for speed control, forward and reverse LED indicators, and six 2mm colour coded sockets. The DCMTS can be connected to a PC through USB. The DC motor is connected to a 148:1 reduction gearbox fitted with a servo potentiometer and an optical encoder.

The DCMTS is supplied with an interactive software program with a user friendly interface allowing the user to begin using the equipment with minimal setup. The software introduces the principles of DC motors, their application and control. The software includes questions and answers to allow the teacher to evaluate the knowledge of the student. The system comes complete with software, a USB lead and a power supply.

### Curriculum Coverage

- Types of DC Motor
- The Components Of A Permanent Magnet DC Motor
  - Armature, Motor Housing, Brushes
- Electric Motor Theory
  - Dynamo Development, Magnetism, Magnetic Propulsion
- DC Motor Theory
  - Flemings Left Hand Rule, Faradays Law, Lenzs Law
- Permanent Magnet DC Motor Theory
  - Commutation, Torque, Speed, Speed Regulation, Motor Starting, Current, Loss and Efficiency
- DC Motor Operation
- Control Theory
  - Pulse Width Modulation, Control Circuits, Speed Encoder, Control Methods, Open Loop Control, Closed Loop Control, Three Term PID Control



Control and Tutorial Software

<b>Specification</b>	
Motor	24V d.c.
Gearbox	148:1
Encoder	24 step positions
Connections	6 x 2mm colour coded connectors- Motor, PWM, Encoder, Servo Pot and 0V 1 x USB connector 1 x 2.1mm power jack socket
Indicators	2 x LEDs Forward and Reverse 1 x Power LED
Controls	1 x Variable speed control switch 1 x Manual or computer selector switch
Power supply requirements	24V d.c. @ 2.0A

**Required**  
*A suitable PC with Minimum; Pentium processor, 1GB RAM, 20GB HDD, CDROM Drive, USB Interface and Windows XP or above*

<b>Ordering Information</b>	
<b>Model Number:</b>	<b>DCMTS</b>
<i>Consists of:</i>	1 x DC Motor mounted in case with USB connection 1 x Power supply unit 1 x USB cable 1 x Software CD

<b>Weights and Dimensions</b>			
<b>Un-Packed</b>		<b>Packed</b>	
Approximate Dimensions (mm)	267W x 185D x 80H	Approximate Dimensions (mm)	400W x 300D x 300H
Approximate Weights	2.0Kg	Approximate Weights	3.0Kg

**Bytronic Limited**  
 124 Anglesey Court, Towers Business Park,  
 Rugeley, Staffordshire, WS15 1UL.  
 United Kingdom  
 Tel; +44(0)8456 123 155      Fax; +44(0)8456 123 156  
 Email: sales@bytronic.net      Website: www.bytronic.net