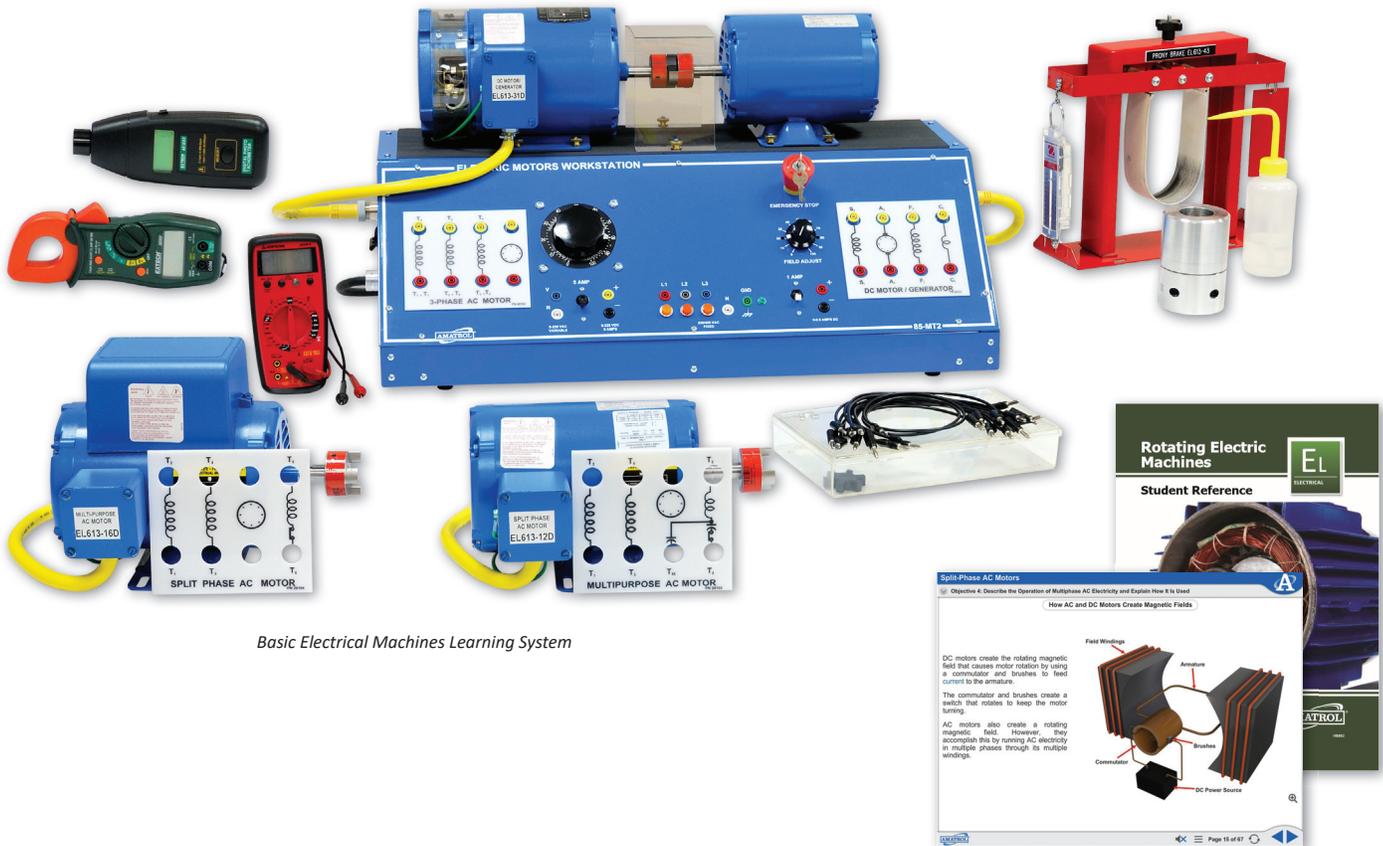


Basic Electrical Machines Learning System

85-MT2



Basic Electrical Machines Learning System

Interactive Multimedia Curriculum and Student Reference Guide

Learning Topics:

- DC Series Motors
- Electric Motor Safety
- DC Shunt and Compound Motors
- Motor Speed Measurement
- Motor Torque Measurement
- Motor Power and Efficiency
- Split-Phase AC Motors
- Capacitor-Start AC Motors
- Bleeder Resistor Application
- Permanent-Capacitor Motors
- Two-Capacitor Motors
- Three-Phase AC Induction Motors

Amatrol's Basic Electrical Machines Learning System (85-MT2) teaches electric machines commonly found in industrial, commercial, and residential applications: single phase AC motors, three-phase AC electric motors, and DC electric motors. Learners practice industry-relevant skills including operation, installation, analyzing performance, and selecting electric machines for various applications.

Amatrol's 85-MT2 features a number of industrial machines, including an AC multi-purpose single phase motor, a split phase motor, a DC motor/generator, and a 3-phase induction motor. This learning system also includes an integrated base test unit, phototachometer, lead set, prony brake, handheld clamp-on multimeter, handheld digital multimeter, world-class curriculum, and a student reference guide. This system uses industrial quality wiring schematic components both to help learners become better prepared for what they will encounter on the job and to withstand frequent use.



Technical Data

Complete technical specifications available upon request.

Integrated Electrical Base Unit

- Heavy duty steel enclosure
- Dual motor mounting base
- Variable AC power supply, 1-phase, 0-140 VAC, 8 amps
- Variable DC power supply, 120 VDC, 8 amps
- Fixed AC power supply, 3-phase, 208 VAC, 5 wires
- Adjustable DC field supply, 0-0.5 amps
- 3-phase circuit breaker
- Emergency stop push button with key lockout
- Arrays of 8 binding posts for motor interconnections (2)
- Integral motor connections (2)
- Coupling spider and guard

Phototachometer

- LED display, handheld
- 10000 rpm, memory

Prony Brake Unit

- Torque range 0-3.05 N-m
- Formed steel gage unit
- Aluminum brake drum with mounting for motor shafts
- Spring force gage

Patch Cord Kit (15)

Handheld Multimeter

- Clamp-on type
- Analog scale
- Voltage range, 0-600 VAC
- Current range, 0-300 amps

Handheld Digital Multimeter

- Voltage range, 0-600 VAC & VDC
- Current range, 0-10 AC & DC Amps
- Ohmic range to 20 Megohms
- Diode and battery check

AC Multipurpose Single Phase Motor

- 115 VAC/60 Hz, 1/3 Hp rating, 1725 RPM
- NEMA 56 frame
- Configurable to capacitor start, permanent capacitor, and capacitor start/run type motors
- Single end shaft for safety
- Special shaft end to accommodate tachometer
- Complete with coupling and legend plate

Split-Phase AC Motor

- 115 VAC/60 Hz, 1/3 Hp rating, 1725 RPM
- NEMA 56 frame
- Single end shaft for safety
- Special shaft end to accommodate tachometer
- Complete with coupling and legend plate

DC Motor / Generator

- Dual function motor and generator
- 1/3 HP rating, 1725 RPM
- NEMA 56 frame
- Configurable to series, shunt or compound wound motor or generator
- Single end shaft for safety
- Special shaft end to accommodate tachometer
- Complete with coupling and legend plate

Three-Phase Induction Motor

- 208 Volts, 1/3 HP rating
- NEMA 56 frame
- Single end shaft for safety
- Special shaft end to accommodate tachometer
- Complete with coupling and legend plate

Student Curriculum – Interactive PC-Based Multimedia (MB862)

Instructor's Guide (CB862)

Installation Guide (DB862)

Student Reference Guide (HB862)

Additional Requirements:

- Hand Tool Package (41201)
- Mobile Technology Workstation – 6-ft. (82-610 or equivalent)
- Personal Computer

For PC requirements, see <http://www.amatrol.com/support/computer-requirements>

Utilities Required:

- Electrical power: 3-phase, 208 VAC, 5 wire, 60 Hz, 12 amps

Industrial Standard Machines and Wiring Technology

The 85-MT2's electrical machines are off-the-shelf industrial units that provide learners with real world experience in industrial wiring installation and alignment of industrial motors. Each unit is rated at 1/3 Hp, which is the minimum size at which motor performance data models the performance of larger motors. Units are connected to load devices through an industrial standard flexible coupling that allows for learning of shaft alignment techniques.

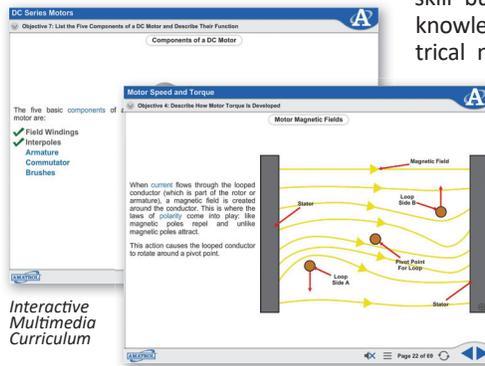
Each machine's power connections use industrial standard wiring terminology (e.g. T numbers) so that learners study how to connect electric machines in the same manner as they would on the job. The 85-MT2 uses replaceable wiring diagram panels for learning evaluation.



1/3 Hp Industrial Motor

World-Class Electrical Machine Curriculum and Interactive Multimedia

The 85-MT2 features a stunning depth and breadth of electrical machine topics within Amatrol's world-class curriculum. This curriculum marries machine theory with hands-on, real world skill building so that learners can directly apply this knowledge to the operation and installation of electrical motors. Learners will begin by studying electrical motor basics and safety, then move on to more advanced applications such as performance analysis, torque and speed measurement, and motor configurations.



Interactive Multimedia Curriculum

Amatrol provides this curriculum in an interactive multimedia format. This multimedia features all of the topics and skills from our traditional printed curriculum and adds audio, spectacular full-color graphics, and 3D animations to fully engage learners.

Hand-Held Digital Multimeter

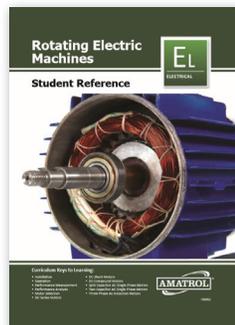
The pocket digital multimeter allows learners to analyze the performance of each machine in a realistic setting just as they would in the field. Built-in variable AC and DC power supplies enable learners to study the operation of AC and DC machines under a variety of conditions. Its unique switching system has an 11-position switch that allows learners to read current and voltage in all three legs of power without disconnecting leads.



Industrial Loads with Prony Brake

Industrial Loads with Safety

The integrated test unit has provisions for mounting a prony brake to load motors so learners can observe their operation under real world conditions. The unit also mounts two coupled machines to demonstrate generator operation. Safety devices include a 3-phase circuit breaker and a keyed emergency stop pushbutton.



Student Reference Guide

A sample copy of this course's Student Reference Guide is included with the learning system. Sourced from the multimedia curriculum, the Student Reference Guide takes the entire series' technical content contained in the learning objectives and combines them into one perfect-bound book. Student Reference Guides supplement this course by providing a condensed, inexpensive reference tool that learners will find invaluable once they finish their training, making it the perfect course takeaway.

