

# Series 100 1/3 Horsepower Machines

Educational Training Equipment for the 21st Century

Bulletin 250H

## SERIES 100 1/3 Horsepower Machines

### Purpose

The Hampden **Series 100** complement of one-third horsepower AC and DC motors and generators provide instructors a large measure of flexibility in teaching electrical power technology. The competency-based program produces maximum student involvement while making optimum use of the instructor's time.

The **Series 100** system of machines, controllers, and accessories is designed primarily for multi-level instruction in electrical power generation and utilization. As such, it is equally suitable for:

- (1) Electrical Trades,
- (2) Air Conditioning and Refrigeration,
- (3) Appliance Repair, and
- (4) as an introductory approach to the more sophisticated machines found in advanced grades and technical courses.

One of the unique advantages of the **Series 100** Program is the low capital outlay required, making possible a higher equipment/student ratio. Students benefit from "hands-on" experience with a greater variety of machines, while the instructor benefits from efficient scheduling of equipment.

Contributing to the overall instructor-student efficiency is the ease with which students are able to connect the machines, controllers, and accessories. Standard machines with NEMA 56 housings are wired through a completely enclosed terminal box to binding posts on the terminal panels. Students then make the connections according to silkscreened symbols. Since all machine wiring is done through the terminal box, students are never exposed to "live" terminals.

These machines compare directly to the types commonly used in major appliances and industrial shops, both in size and operating characteristics. Experimental results, therefore, are much more relevant to the students.



### Description

The basic complement of Hampden **Series 100** Motors, Generators, and Alternators is shown on the back of this sheet. Also available are a large number of suitably-rated load units, starters, controllers, tachometers, power supplies, meters, and test equipment, as well as interface panels to permit computer-supervised operation and data processing.

Each machine, with its double shaft extension, is permanently mounted on a Medite base along with its terminal box. When in use, machine bases are firmly secured to a bedplate, preventing any lateral movement while the machines are running. No tools are required. Bedplates are available for two machines (**MODEL MGB-100-DG**) or three machines (**MODEL MGB-100-DG3**), as described on Bulletin 256. All bedplates are constructed of heavy steel and rest on rubber vibration pads.

Ease of student use is further facilitated by the quick-connect double serrated coupling that simplifies alignment while maintaining a positive coupling. Students are protected from the hazards of spinning shafts by coupling guards.

Each machine is protected by a suitably-rated ON/OFF switch, both sides of which terminate at the control panel. Also mounted within the terminal box and accessible from the control panel are rheostats, as required.

The complete Electrical Power Technology Program includes four Student Manuals, as follows:

Bulletin 250-OI,  
*Operating Instructions*  
Bulletin 100DC-EX,  
*DC Motors and Generators*  
Bulletin 100AC-EX,  
*AC Motors and Alternators*  
Bulletin 253-EX,  
*Transformers*

For post secondary programs the following Student Manuals are recommended:

Bulletin 250DC-EX  
*DC Machines*  
Bulletin 250AC-EX  
*AC Machines*

All Hampden units are available for operation at any voltage or frequency

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## DC MACHINES



### MODEL DCG-100

125V @1A 1725 rpm  
Series  
Shunt  
Compound



### MODEL DCM-100

1/3 hp 1725 rpm  
Series  
Shunt  
Compound



### MODEL DM-100A

Motor: 1/3 hp 1800 rpm  
Generator: 125V @2A 1800 rpm

## 1Ø AC MACHINES



### MODEL SPM-100

1/3 hp 1725 rpm  
(Split-phase,  
resistance-start-induction run)



### MODEL MFM-100

1/3 hp 1725 rpm  
Split-phase  
Capacitor-Start  
Single-value Capacitor  
Two value Capacitor



### MODEL CSM-100

1/3 hp 1725 rpm  
(Split-phase,  
capacitor-start-induction-run)

## 3Ø AC MACHINES



### MODEL WRM-100-3A

1/3 hp 1725 rpm  
(Slip-ring motor. May also be run as  
synchronous motor)



### MODEL IM-100

1/3 hp 1725 rpm  
(Squirrel-cage rotor; wound stator)



### MODEL SM-100-3

Motor: 1/3 hp 1800 rpm  
Alternator: 120 VA 1800 rpm

Dimensions: 10½"H (excluding rheostat knob) x 9½"W (excluding shaft extensions) x 14"D. Average Weight: 45 lbs per unit

All Hampden units are available for operation at any voltage or frequency



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