

Smart Grid Trainers

Educational Training Equipment for the 21st Century

Bulletin 190-1B

190 Series Smart Grid Trainers

Purpose

The **Hampden 190 Series** of Smart Grid Trainers have been developed to educate students with the technology being used in the field of electrical power generation and distribution. Each individual module will demonstrate a key section of the power grid. When the individual modules are combined a modern smart grid is created.

The Hampden **Model H-190-1** Smart Grid Electrical Distribution Trainer is focused on the area of power distribution. Covering electric power distribution, transmission lines and line protection.

Features

- Three Phase Feeder Sections (4)
- Three Phase Coupler Section
- Transmission Line Section with (3) Line Distances
- Resistance Load Section with Wye-Delta Configurations
- AC Power Supply Section
- Three Phase Power Meter (3)
- H-LTCS Lap Top Controller
- Manuals
- Software (SCADA)
- Interconnection Cables
- Color Coding

Topics Covered

- Basic Three Pole Circuits
- Busbar Switch Over
- Algorithm Preparation
- Busbar Coupling
- Voltage Increases
- Voltage Drops
- Power Loss
- Phase Shift
- Overcurrent Protection
- Circuit Breaker Behavior



Hampden Model H-190-1
Smart Grid Electrical Distribution Trainer
Dimensions: 75"H x 60"W x 32"D
Shipping Weight: 891 lbs.

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

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Smart Grid Trainers

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Bulletin 190-2B

190 Series Smart Grid Trainers

The Hampden **Model H-190-2** Smart Grid Load Monitoring Trainer focuses on the area of consumer consumption. Investigating the best ways to maximize power usage. Covering dynamic loads and manual and automatic compensation of reactive power.

Features

- Lamp Load
- Inductive Load
- Capacitance Load
- Resistance Load
- Synchronous Machine
- Induction Motor
- Power Controller
- Wye-Delta Switch
- AC/DC Power Supply
- Three Phase Power Meter (2)
- Manuals
- Interconnection Cords
- Coupling and Shaft Gaurd
- Color Coding

Topics Covered

- Wye and Delta Connections
- Synchronous and Asynchronous Loads
- First and Second Power Monitoring
- Dynamic Loads
- Energy Flow Reversal
- Compensation Capacitors
- Staged Power
- Reactive Power



Hampden Model H-190-2
Smart Grid Load Monitoring Trainer
Dimensions: 75"H x 60"W x 32"D
Shipping Weight: 901 lbs.

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

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