



UTILITY TRANSMISSION DISTRIBUTION



Hampden[®]
ENGINEERING CORPORATION



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EXTEND CLASSROOM KNOWLEDGE INTO A REAL-WORLD, HANDS-ON ENVIRONMENT WITH HAMPDEN DISTRIBUTION TRAINING EQUIPMENT

H-DTT-26 Transformer Lab Kit



The Hampden **Model H-DTT-26** allows students to correctly make connections to power transformers located on utility poles. Students will work in a lab using miniature hardware that mimics the appearance of real-world equipment and an apparatus that looks like a short length of power line. The **H-DTT-26** contains safety features to limit current should a direct short circuit occur. Each apparatus has 6 single phase transformers with a step-down ratio of 10:1 that simulates the power transformers found on utility poles. There are 2 primary leads and 4 secondary leads. The secondary leads of the transformer can be connected in series or parallel. Low voltage outputs provide a safe environment for students.

Specify **Model H-DTT-26** for 120/208V AC 3Ø input and **Model H-DTT-26-120** for 120V AC 1Ø input.

THE FOLLOWING OPTIONAL ACCESSORIES ARE AVAILABLE FOR THE MODEL H-DTT-26

- **Model H-DTT-26-FP** Electrical Fault Package Option
- **Model H-DTT-26-CSX** Color Coded Cord Set Option
- **Model H-HMR-26** Roll Around Storage Cabinet for all components of 6 lab sets
- **Model H-PRM-26** Phase Rotation Meter

H-7947 Direct Burial Transformer Switching Trainer

The Hampden **Model H-7947** Transformer Switching Trainer has been developed to assist Utility Company Linemen in developing the necessary skills required for expeditiously locating and isolating underground faults, and adding new transformer locations into an existing system. All of the necessary procedures for locating a fault, that would be followed in actual practice, can be duplicated on this trainer. There are twenty-two faults built into the key-locked fault compartment which can be introduced by the instructor. The simulator is controlled by a DOS-based computer system, integral to the simulator. It contains the control program, written in a high-level language, along with Serial and Parallel ports for future expansion with the **H-7947-STO** Student Tracking Option.



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H-LRT-1-D Loop Reclosure Trainer with Dynamic Interface



The Hampden **Model H-LRT-1-D** Loop Reclosure Trainer with Dynamic Interface provides students and trainees with practical experience in the operation, maintenance and troubleshooting of distribution reclosures in general, and reclosures in a loop specifically. The system depicted on the front panel of this trainer is of a simple loop, fed from two separate transformers. It utilizes five reclosures on the graphics, two of which are inactive and three that are active. There is one set of connectors for each simulated reclosure. These are labeled "Sectionalizing", "Mid-point", and "Tie" to correspond with the three actual reclosures. At each of the three line sections, between the feeder and the three reclosures, any of the three phase voltages can be switched off to simulate a loss of voltage. Although the trainer depicts a three phase system, it operates on 120 volts single phase and all voltages are internal so that there is no hazard while operating the trainer. The trainer is controlled by a computer system, integral to the trainer. It contains the control program, written in a high level language. The program allows the instructor to interact with the trainer and provide student tracking. Within the enclosure is a stand-alone controller, which controls the trainer when not interacting with the instructor's connected computer.

H-DNT Distribution Network Trainer

Hampden's **Model H-DNT** Distribution Network Trainer provides students and trainees with practical experience in the operation, maintenance and troubleshooting of network systems. The Distribution Network Trainer can also be used as a working model for lecture demonstrations. The trainer consists of a mobile frame where a panel and enclosure are mounted. Within the enclosure is a computer for control and instructor interfacing to the system. The panel contains switching, instrumentation and graphics depicting a three circuit substation feeding three distribution lines. The three distribution lines feed seven network units and two fused disconnects. Five of the network units feed a low voltage secondary grid. The remaining two networks feed to a spot network with their outputs feeding a collector bus. The two disconnect switches are connected as a dual primary or loop distribution scheme. The **Model H-DNT** contains thirteen realistic faults that can be activated by the instructor. Some faults are activated with all equipment working normally, while others are activated when a protector fails to open.



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Hampden Engineering Corporation

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H-TCB-3 **Transformer** **Connection Board**

Hampden's **Model H-TCB-3** Transformer Connection Board is used to assist Utility Company Linemen in developing the necessary skills required for connecting residential transformers. The system depicted on the graphics of this trainer, consists of a 4160V line, three transformers and a distribution network. Each transformer is fused and the system incorporates a switch for either wye or delta operation. A 5KV AC voltmeter and a 600V AC voltmeter are provided. This unit mounts on a Hampden MCI-1000 Mobile "A"-Frame with 8 foot power cord.



H-OFT-180 **Oil Filled** **Transformer Trainer**

Hampden's **Model H-OFT-180** is designed to provide training in the areas of power distribution and how transformers relate to power being supplied to the user. The trainer is designed to assist the student in investigating the many factors that affect the transformer's distribution of power such as: voltage level, balanced loading, reactive lines and loads, phase angles, temperature, overloading, and distance, to name a few. The trainer is designed to be connected to or in series with a distribution line. Since it is fully operational, it can be used as a integral part of a laboratory distribution system, as well as a stand alone trainer. The trainer is designed to demonstrate elementary concepts leading up to the more complex system analysis.



Hampden is committed to providing industry-leading technology.

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