

H-DWTS-CSI

Digital Wastewater Treatment Simulator

Purpose

The modern sewer system is an engineering marvel, connecting businesses, homes and industries. Complex systems of underground pipes transport wastewater to sophisticated treatment plants. These plants must return cleansed, purified water to the environment after extracting as much waste material as possible.

Treatment of wastewater, begun in the 19th century, as a specialized process with very slight margins for error. Over the years, the process has been refined and modified in many ways to accommodate specific needs—however, the basic plant does not vary greatly. The primary concepts and structures can be taught and explored using this basic model which is compatible with virtually all modern treatment plants.

Description

The **Model H-DWTS-CSI** Digital Wastewater Treatment Simulator is a PC-compatible computer controlled platform. The operator monitors and controls every aspect of the treatment process including:

- Inlet pump control
- Grit removal
- Primary sludge removal
- Biological filtering
- Chlorine mixer
- Sludge management, etc.

The module's front panel displays both a complete schematic and pictorial of the system. All functions operate as on the actual equipment and present the student with realistic problem situations. Simulator includes Hampden H-LTCS Laptop Computer.



MODEL H-DWTS-CSI – Digital Wastewater Treatment Simulator

General

The panel provides metering at the key points in the treatment process, including:

- Incoming Flow
- Influent pH
- Bar Rack Screening
- Primary Sludge Removal
- Initial Dissolved Oxygen
- Mid Dissolved Oxygen
- Final Dissolved Oxygen
- Flocculation Basin
- Return Activation Sludge (RAS)
- Waste Activated Sludge (WAS)
- BOD and TSS levels
 - Inlet
 - Primary Basin
 - Aeration Basin
 - Effluent
- Disinfection (Cl) Injector
- Residual Chlorine Removal
- Effluent pH

Troubleshooting

The simulator has the capability of 20 malfunctions which can be inserted singly or in multiples.

Component test switches and indicator lights monitor the status of various components and permit troubleshooting for faulty components. Analog meters monitor various steps in the process.

Physical Specifications

The trainer is housed in a rugged table-top enclosure, with tri-colored graphics panel offering a pictorial detailed representation of the plant. The control panel has the plant controls and instrumentation. A terminal permits the instructor to determine the operating characteristics of the trainer and starting parameters. In addition, the terminal allows the instructor to insert malfunctions into the simulation process.

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

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