

Product Name :
Coupled Tanks System

Product Code :
CE458



Description :

Coupled Tanks System

Technical Specification :

Coupled Tanks System

The Coupled Tanks set-up is a model of a chemical plant fragment. Very often tanks are coupled through pipes and the reactant level and flow has to be controlled. The Coupled Tanks experiment is designed so that the system can be configured. The Coupled Tanks system has 4 translucent tanks each with a pressure sensor to measure the water level. The couplings between the tanks can be modified by the use of seven manual valves to change the dynamics of the system imposing the use of different controllers.

Water is delivered to the tanks by two independently controlled, submersed pumps. Step disturbances generation is provided by four manual valves. Drain flow rates can be modified using easy-to-change orifice caps. The Coupled Tanks are controlled by using MATLAB SIMULINK® (not supplied) and the supplied Advantech PCI1711 Interface card. The Coupled Tanks System version is for use with LabVIEW. The user may build their own models or use the models supplied together with the curriculum. The process variables can be observed on-screen in plots. Control algorithms are developed, tested on models and then implemented in a real-time application.

Curriculum Coverage

Non-linear model

Linearization

Linear model simulation.

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