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Product Name :
Chemical Reactor Process Trainer With PLC

Product Code :
LBNY-0005-10600011



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Description :

Continuous flow reactors are common unit operations in chemical processing plants. Chemical Reactor Process Trainer with PLC is a reduced scale plant that demonstrates continuous flow, exothermic chemical reaction. They are found throughout the petroleum, petrochemical and numerous other industries. Reactants are hydrocarbon fuel and atmospheric oxygen; products are combustion flue gasses. The entire trainer is controlled from a DCS or PLC computer interface with custom designed software and control configuration. The process has instrumentation to provide for reactant flow rate control, product gas analysis, temperature and pressure indication and an interlocking safety system. This gives the student the opportunity to gain real operating experience focusing on both the process of exothermic chemical reactions and on control strategy.

Objectives:

Impact of varying operating conditions of reactant flow, excess or limiting reactants and residence time
Control experience on a Programmable Logic Controller
Continuous flow reactor operation and measurement
Process control concepts for manual and automatic operation
Material balances
Equipment start-up and operating procedures.

Technical Specification :

Continuous up-flow reactor with interchangeable direct combustion and catalytic combustion tips
Interlocking safety system to stop fuel flow in the event of a flame failure

Electronic ignition system
Integrally mounted fuel canister Time to reach steady state after a reasonable step change less than 10 minutes
Integral viewing ports
Flow measurement of reactant streams
Analysis of product stream
Thermocouple temperature measurement
Electronic process measurement,
Custom programmed software configuration and computer operator interface
Complete unit mounted on a stainless steel frame
Interlocking safety system to stop fuel flow in the event of a flame failure
Electronic ignition system
Complete unit mounted on a stainless steel frame
Personnel protection shields on hot surfaces
Custom programmed software configuration and computer operator interface
Personnel protection shields on hot surfaces.



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