

Flash Drum Trainer with PLC Control



Model Series: FD-700

Description:

The flash drum trainer is a bench-scale plant that demonstrates continuous separation of a binary mixture of water saturated with carbon dioxide. The process has instrumentation to provide for control of operating flow, temperature, level and pressure. This trainer provides the student the opportunity to gain real operating experience focusing on both the process of flash separation and control strategy.

Function:

The separation of volatile gases dissolved in a liquid and recovery of the components usually involves a flash drum. Flash drum operations are found throughout the petroleum, petrochemical and numerous other industries. This trainer separates a water/CO₂ mixture in a see-through, industrial glass vessel. The trainer is equipped with process measurement and control devices. It has one each of: temperature, pressure, level and flow controls. The entire trainer is controlled from a programmable logic controller computer interface (PLC).

Equipment Specification Highlights:

- See-through separator vessel - 6" (15mm) ID
- Electric process heater
- Membrane pre-carbonator using bottled CO₂ and tap water
- Electronic process measurement with 4 PID control loops by PLC
- Time to reach steady state after a reasonable step change - less than 10 minutes
- Complete unit mounted on a metal table
- Approximate overall dimensions - 122 x 66 x 150 cm high (48" x 26" x 60" high)
- Available in all world voltages / frequencies (customer to specify electrical power available on-site)

Options:

- Pneumatic or electric modulating control valves
- Control by PID loop controllers mounted in a control panel

Control Component Protocol:

- Hart 4-20 mA