Instrumentation
Final Control Elements

Course Objectives

1. Explain the role of final control elements in a simple closed control loop model.
2. Identify common types of final control elements including: control valves, louvers/ dampers, motors, and heaters.
3. Describe the purpose of common final control elements.
4. Describe the operation of common final control elements.
5. Describe safety concerns for common final control elements.
6. Describe typical malfunctions for common final control elements.
7. Explain functions of valve positioners.
8. Identify final control elements in control loops on P&IDs.

Key Terms (Define the following)

discreet control valves - _____

_____

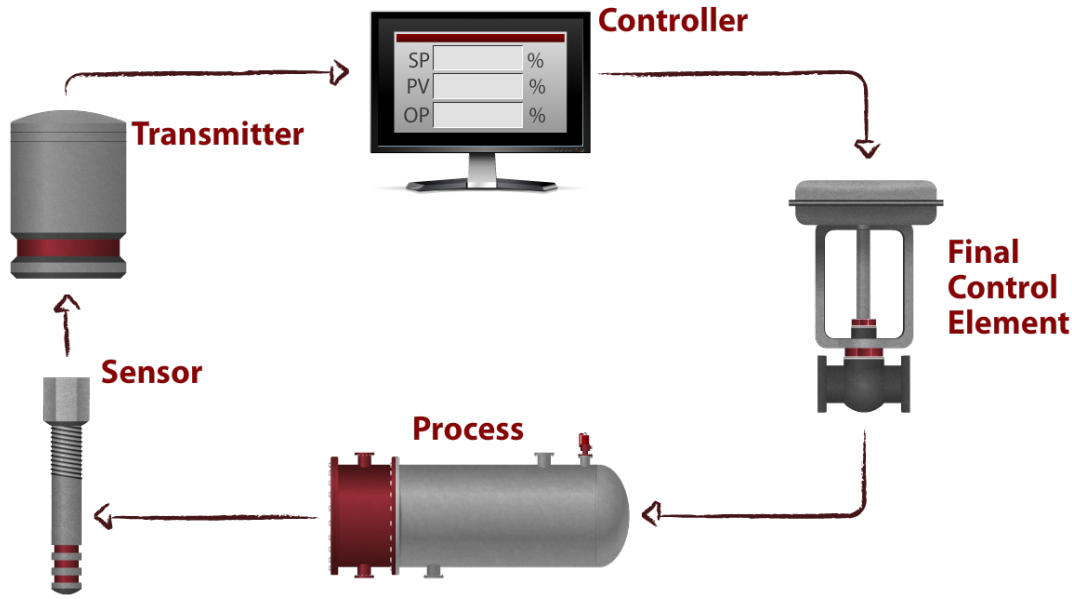
valve positioner - _____

_____

louvers - _____

_____

Principles



Questions

1. Automated control valves _____ fluid flow to manipulate a controlled variable.
   - ☐ restrict
   - ☐ increase
   - ☐ vary
   - ☐ redirect

2. A ball valve typically would be used in a feedback control loop to provide throttle control.
   - ☐ True
   - ☐ False

3. Valve positioners can be used to measure flow rate.
   - ☐ True
   - ☐ False

4. Electric motors tend to not respond as fast as control valves.
   - ☐ True
   - ☐ False