

Piping and Instrumentation Diagrams



2-Way Valves

A 2-way, on/off valve is symbolized by two equilateral triangles that point toward each other.



Ball Valve



Butterfly Valve



Plug Valve



Gate Valve





Globe Valve



Needle Valve

Diaphragm Valve



3-Way



3-Way & 4-Way Valves

For multi-port valves, additional triangles are added to the symbol.



L-Port



T-Port







Additional Types of Valves



Angle Valve



Check Valve

Pressure Relief Valve

Pressure Reducing Valve



Solenoid Valve

Various Types of Actuators



Hydraulic Actuator



Manually Operated



Pneumatic Actuator (Diaphragm type) Pneumatic Actuator (Rotary Piston Type)



Electric Actuator

Failsafe Positions

Actuators with failsafe options are depicted by a line and arrow either pointing toward the ball (failsafe closed) or away from the ball (failsafe open). These can also be defined with the letters "FO" or FC."



Fail Closed



Fail Open







Signal Lines



Pneumatic Signal



Electronic or Electric Signal

Unguided Electromagnetic, Sonic, or Wireless Signal

Guided Electromagnetic, Sonic, or Fiber Optic Signal



Various Data Communication Signals



Pumps, Fans, & Compressors





General Pump

Centrifugal Pump





Gear Pump







Helical Rotor Pump



Vacuum Pump or Compressor



Fan



Axial Fan



Radial Fan

Sensors, Transmitters & Meters



