PART 1 - GENERAL

1.1 SUMMARY
A. Section includes control valve requirements for systems as shown in Contract Documents for connection to building control systems, except where provided by equipment manufacturer.
B. Utility interface control valves are covered in section 25 33 13.
C. Control valves shall be supplied by controls contractor and installed by piping contractor.
D. Related Sections:
   1. 25 35 13 Actuators and Operators
   2. 25 05 53 Identification

1.2 REFERENCES
A. Refer to 25 00 00 Integrated Automation

1.3 DEFINITIONS
A. Refer to 25 06 11 Integrated Automation Definitions

1.4 SYSTEM DESCRIPTION
A. Control valves for each application shall be from the same manufacturer.
B. Valves shall be 2 way unless otherwise noted.

1.5 SUBMITTALS
A. Valve Schedule:
   1. Indicate unique identification for each device, equipment item or system served.
   2. Cv, Sizes, Model, Body Type, design gpm, pressure drop
B. Product data sheets - Include construction materials and assembly methods, maximum design parameters (temperature, pressure, flow rate, etc.), and performance data for full range of actuator stroke. Annotate to indicate options selected & actual part #'s.

Note: Section specific submittal requirements should be defined here but not repeated from other sections.

1.6 QUALITY ASSURANCE
A. Obtain adequate system information necessary for valve sizing. Coordinate with Mechanical Contractor to ensure that valves and mechanical systems operate optimally.
B. All modulating automatic temperature control valves in water lines shall be provided with characterized throttling plugs and shall be sized to achieve a minimum of 25% of the system pressure drop or 5 psi, whichever is less.
C. Select valves to provide tight shut-off against maximum system temperatures and pressure encountered.
PART 2 - PRODUCTS

2.1 WATER CONTROL VALVES

A. Manufacturers: Belimo or approved equivalent

B. Control valves shall be characterized as ball valves.

C. Select valves to provide tight shut-off against maximum system temperatures and pressure encountered.

D. Control valves serving hot or chilled water coils shall be Pressure Independent Control Valve type.

E. Characteristics:
   1. Turn down ratio 40:1
   2. Flow Characteristics Modified. Equal percentage
   3. Control Action Normal open, closed, or fail in place as required per application.
   4. Body Type Threaded ends 2 inch and smaller, flanged 2½ inch and larger
   5. Body Material Bronze, or Stainless Steel as required by service
   6. Body Trim Bronze, or Stainless Steel as required by service.
   7. Stem Stainless Steel

2.2 STEAM CONTROL VALVES

A. Manufacturers: Belimo or approved equivalent.

B. Characteristics:
   1. Control Action Normal closed
   1. Body Type Threaded ends with steel piping
   2. Ratings
      a. 2 inch and smaller 150 psi
      b. 2.5 inch and larger 125 psi
   3. Body Material
      a. 2.5 inch and larger Iron body, flanged, brass mounted
   4. Stem Stainless Steel,

C. Include spring-loaded Teflon packing, and replaceable stem/plug and packing kits

2.3 TWO POSITION CONTROL VALVES

A. Furnish two position control valves as shown in documents or for equipment isolation.

B. Open/close, 2 position control valves shall be line size, ball, or butterfly valves with high Cv to minimize pressure drop.

PART 3 - EXECUTION

3.1 ALL CONTROL VALVES

A. Covered under Section 25 3513 Actuators and Operators

END OF SECTION