Sample Specification

Section 15000; Modulating Control Valves

A. Provide a modulating, 2-way control valve with integrated hydraulic actuator to allow modulation from maximum flow to shut off.

B. Control valves shall be pressure independent. The basis of design is the DeltaPValve® as manufactured by:

Flow Control Industries, Inc.  
PO Box 848  
Woodinville, WA 98072

C. Valve shall require no more than 5 PSID [0.34 bar] to operate pressure independently. Flow shall not vary more than +/-5% through the entire operating pressure range of 5 to 70 PSID [0.34 to 4.83 bar].

D. Each control valve shall be individually flow tested and factory verified to deviate no more than +/-5% through the entire operating pressure range of 5 to 70 PSID [0.34 to 4.83 bar]. All valves shall be tested on a test stand calibrated and verified with traceability to NIST standards. All testing must be performed at 5 PSID [0.34 bar] (0 to 100% opening in 10% increments), 15 and 70 PSID [1.03 to 4.83 bar] (50% and 100%).

E. Valve bodies shall be carbon steel or cast ductile iron. All internal parts shall be brass, carbon steel, and 304 stainless steel. Inflatable, internal expanding seal shall be EPDM.

F. Valves must be provided with an integrated hydraulic actuator. Actuator must be by same manufacturer and be factory tested as a complete assembly with the control valve assembly.

G. Hydraulic actuator must be capable of responding to a 0-10 VDC, 2-10 VDC, or 4-20 mA signal, or via a 3-point floating 24V input signal.

H. Fail positions on power failure must include in-place, open or closed.

I. Hydraulic actuator must include a front display panel to allow access to the controls. Controls must also be accessible via a serial communications connection (Modbus RTU). The following information must be provided through the panel or via the serial communication:

   a. On/Off/Remote/Local status
   b. % Open
   c. Valve differential pressure (P1-P3)
d. Intermediate pressure (P1-P2)

e. Target position

J. Initial installation process must include an auto purging, self-calibrating function to simplify setup.

K. Valves shall have (3) factory installed pressure/temperature ports to allow field verification of flow and pressure independent operation.

L. Valve assembly shall be warranted to be free of defects in material and workmanship for 5 years from date of purchase. Hydraulic actuator assembly shall be warranted for 2 years from date of purchase.