Honeywell Zone Valve

2-Way and 3-Way VN Zone Valves ½ to 1 inches:

Valve housing shall consist of forged brass with a nominal pressure rating no less than 290 psi. Valve ball shall consist of chemically nickel-plated brass. Valve shall have a stainless steel stem with EPDM O-ring. Modulating valves shall be profiled to provide equal percentage flow. On/off valves shall be full port. Valves shall be Honeywell. Both 2-way and 3-way valves shall have PTFE ball sealing to provide 87 psi close-off with a 22 lb-in. actuator for ½, ¾ and 1 inch sizes. Valves shall be available with threaded (fNPT) end connections. Factory installed actuators shall be available in 24-volt modulating, 24-volt on/off and line voltage on/off in both non-fail-safe and electronic fail-safe configurations.

Honeywell Zone Valve

SECTION 23 09 00
INSTRUMENTATION and CONTROL for HVAC

PART 1 GENERAL

1.1 SUMMARY

PART 2 MATERIALS

2.1 ZONE VALVE

A. The valve and actuator combination product family shall be a factory assembled and tested unit. All valves and actuators shall be manufactured under ISO 9001 International Quality Control Standards.

B. The actuator shall provide two-position or modulating control. Modulating control refers to direct acceptance of 2-10 Vdc or a 4-20 mA input signal. Two-position control of non-fail-safe actuators shall be in the form of 24Vac, 110Vac or 230Vac controlled by SPST switch with a 3-wire connection. Two-position control of fail-safe actuators shall be in the form of 24Vac, or universal 100-240 Vac line voltage controlled by SPST switch with a 2-wire connection.

C. Basis-of-Design: Honeywell VN Series. Products of other manufacturers will be considered for acceptance provided they equal or exceed the minimum requirements and functional qualities of the specified product. Requests for Architect/Engineer's approval must be accompanied by the "Substitution Request Form", all valves and actuators shall be from the same manufacture, with complete technical data, and the valve manufacture's flow testing documentation from an independently owned third-party testing agency for each valve size and model for evaluation. All materials for evaluation must be received by the Project Manager and Specification Department at least 10 days prior to bid due date. Additional approved manufacturers will be issued by Addendum.

2-Way and 3-Way VN Zone valves ½ to 1 inches: Valves shall be available with female national pipe thread pipe (fNPT) fittings

1. Minimum Requirements:
    a. Modulating zone valves shall have an equal percentage flow characteristic.
    b. Valve ball shall be nickel-plated brass.
    c. Valve stem shall be stainless steel.
    d. Differential close-off pressure shall be at least 87 psid for 2-way and 3-way valves with leakage rate of 0.05% of Cv.

e. Threaded valves bodies shall have nominal pressure rating of 290 psig (2000 kPa).

f. Valve stem assembly shall be of a pack-less design. Stem O-ring shall be made of EPDM.

g. Valve shall be available in a single optimized Cv for each valve size and control configuration.

h. Actuated valves shall be capable of closing off against their maximum operating differential pressure. Seat leakage when closed shall be 0.05% of Cv.

i. Actuators shall be direct coupled rotary type requiring neither crank-arm nor linkage and direct mount to the valve. The actuator shall provide a torque of 22 lb-in.

j. Actuators shall be capable of operating on 24Vac Class II power, or be UL Recognized to U.S. and Canadian Standards where used with line voltage.

k. Actuators shall provide factory fitted 18 AWG, flexible stranded cable.

l. Modulating actuators shall have dip switches to select rotation direction, control signal range, and Vdc and mA control signals. Actuators that require to be electronically programmed by use of a handheld programming device or external computer software are NOT acceptable.

m. Actuators shall be designed for a minimum of 100,000 full-stroke cycles at rated load and temperature.

n. Actuation shall be available with electronic fail-safe operation capable of returning the valve to a closed or open position following loss of power.

o. All electronic fail-safe actuators must return the actuator to the fail-safe position within 45 seconds of power loss.

D. General Requirements:

1. Valve Schedule shall include a separate line for each valve and a column for each of the valve attributes: Valve Identification Tag, Location, Valve Type, Valve Size, Pipe Size, Configuration, Flow Capacity, Minimum Design Pressure Drop, Maximum Pressure Drop, Fail Position, Close-off Pressure, Actuator Identification Tag, and Actuator Type.

2. Valves shall not be installed with stems below the horizontal plane to prevent actuator damage due to stem seal leakage, or accumulation of particulate in the stem packing.

3. Valves shall be capable for use only in cold, warm and hot water system applications with diethylene glycol, ethylene glycol, or propylene glycol solutions up to 50% concentration.

4. A water filtration and treatment system shall be installed and operated according to the requirements of Division 23 25 13, Water Treatment for Closed-Loop Hydronic Systems. These requirements shall meet or exceed European Norm VDI 2035. The presence of excess rust in the system will void the manufacturer's warranty.