

## 23 00 00 HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)

### 23 09 00 Instrumentation and Control for HVAC

#### 23 09 13 Instrumentation and Control Devices for HVAC

##### 23 09 13.13 Actuators and Operators

###### Footmount Globe Valve Actuators

###### Mounting and Wiring

1. Actuators shall be direct coupled type requiring a Q5001 linkage and be capable of direct mounting to a Honeywell globe valve from ½ to 6 inches in size (DN15 to DN80).
2. The actuator shall connect to the valve stem using a stem button and clip retainer with an anti-spin clip to prevent the valve stem from spinning.
3. The actuator shall connect to the valve bonnet using a Q5001 linkage.
4. Actuators shall provide wiring terminals located within an integral access cover with conduit connections.
5. Actuators shall be available with splash-proof covers rated NEMA 3R for outdoor mounting.

###### Control

1. The actuator shall provide two-position or floating, or proportional control. Proportional control refers to direct acceptance of 135-270 ohm slide-wire, 2-10 Vdc or, with addition of a 500 ohm resistor, a 4-20 mA input signal. Floating control refers to direct acceptance of 24 Vac pulse-width modulated open and close commands from a tri-state (SP3T) controller. Two-position control for non-fail safe actuators shall be in the form of SPDT 24 Vac power controlled by SPDT switch.
2. Valve actuator shall be capable of operating 24 Vac, 120 Vac, or Multi tap (24,120, 230 Vac) power supplies.
3. Proportional actuators shall have a travel direction by turning the motor around and running the linkage from the corresponding shaft. Floating actuator travel shall have a travel direction by turning the motor around and running the linkage from the corresponding shaft.
4. Proportional control models shall have 2-10 Vdc feedback signal with SPDT switch for position verification feedback as an available option.

###### Other

1. Non-Fail safe actuators shall be available with force ratings of 35 lb-in (4.0Nm), 75 lb-in (8.5Nm), 150 lb-in (17Nm), and 300 lb-in (34Nm).
2. Valves controlling steam should be installed with the actuator beside the valve, not above it, with the actuator mounting linkage oriented to maximize convective air flow for cooling.
3. All actuators must be able to operate from -40 to 150 F (0 to 60 C) ambient temperature, as measured at the actuator.
4. All actuators shall be designed for a minimum of 60,000 full-stroke cycles, and 1,500,000 repositions at rated force load and temperature.
5. All actuators shall be plenum-rated per cUL 174H listed, CE, and be manufactured under ISO 9001 International Quality Control Standards.
6. Actuators shall be as manufactured by Honeywell.

