



600 Emlen Way
Telford, PA 18969

Specifications for the Hydro Model OV-110 Omni-Valve

Specification OV-110

Hydro Omni-Valve Model OV-110 (for 4 to 6,000 PPD Chlorine, Sulfur Dioxide, Ammonia or other) Gas Feed

1.01 GENERAL

1.01.1 Completeness

The system shall be complete with all components, equipment, and appurtenances.

1.01.2 Quality Assurance

All materials and components shall be new and unused of first quality by well-known manufacturers. Inferior materials or components shall not be allowed.

1.02 MANUFACTURER

The manufacturer shall be Hydro Instruments, Telford, PA, USA or approved equal. The automatic control valve shall be Hydro Instruments Model OV-110 Omni-Valve.

1.03 AUTOMATIC CONTROL VALVE

1.03.1 General

1. The automatic control valve shall be provided to control ____ PPD of ____ gas feed under vacuum.
2. The automatic control valve shall be comprised of a PID controller and variable area orifice rate valve. These devices shall be incorporated into one compact unit.
3. The microprocessor based automatic control valve shall adjust the gas feed rate based on one or two electronic input signals or by means of any or all of four input relays.
4. The automatic control valve shall allow for the following standard, field selectable control modes: manual, (flow) proportional control, (residual/ORP) set-point control, (PID) Compound Loop control, Step-Feed control and Dual Input Feed Forward control.
5. Motion of the valve shall be achieved by means of a linear stepper motor.

6. Motion control shall be achieved without the use of a feedback potentiometer.
7. To ensure accurate feed rates throughout the range of operation, the software shall incorporate a 10-point valve linearization calibration.

1.03.2 Construction

1. The automatic valve shall be housed in a NEMA4X rated enclosure.
2. Materials of construction shall be of the finest available for the appropriate chemical.
3. For accurate feed rate control, the length of the variable area orifice portion of the rate valve stem shall be no less than 1.5 inches.

1.03.3 User Interface

1. The automatic control valve shall include a 2-line, 20-character, alphanumeric, LCD display.
2. User controls shall be through a front panel 4-button keypad.
3. Menus and variables shall be displayed in plain English words using easy to read, alphanumeric characters for clear understanding.
4. Control mode and all control parameters shall be password protected and adjustable through the keypad while displayed on the screen.

1.03.4 Inputs and Outputs

1. The automatic control valve shall include three analog input channels.
2. Each analog input signal shall be independently user selectable as either 4-20mA or 1-5V.
3. The first input channel shall be used only for proportional (flow) input signals. The second input channel shall be used only for set point (residual or ORP) input signals. The third input channel shall be used for remote adjustment of dosage or (when in manual mode) for remote manual valve positioning.
4. Four input relays shall be provided for Step-Feed Control capability.
5. A common relay output shall be provided for remote indication of alarm conditions.
6. Two 4-20 mA output signals, proportional to the chemical feed rate, shall be provided.