

GENERAL SPECIFICATIONS

Model 110 Differential Pressure Control Valve

1.1 **General**

The differential pressure control valve shall function to maintain a constant differential between two pressure points, where an increase in said differential shall cause the valve to open. The normally closed, spring-loaded pilot, sensing two pressure points, responds to changes in the pressure difference and causes the main valve to do the same. The valve opens on increased differential. The net result is a constant modulating action of the pilot and main valve to hold the pressure differential constant. The pilot system is equipped with a needle valve response speed control that fine tunes the valve response to the system variables. The high pressure sensing point is typically at the valve inlet, while the low pressure sensing point can be valve outlet or remotely connected, e.g., pump suction. The differential pressure control valve shall be a <size> Model 110, <globe pattern, angle pattern>, with <150# flanged, 300# flanged, threaded, grooved> end connections, as manufactured by OCV Control Valves, Tulsa, Oklahoma, USA.

1.2 **Design**

The differential pressure control valve shall be a single-seated, line pressure operated, diaphragm actuated, pilot controlled globe valve. The valve shall seal by means of a corrosion-resistant seat and a resilient, rectangular seat disc. These, and other parts, shall be replaceable without removing the valve from the line. The stem of the main valve shall be guided top and bottom by integral bushings. Alignment of the body, bonnet and diaphragm assembly shall be by precision dowel pins. The diaphragm shall not be used as a seating surface, nor shall the pistons be used as an operating means. The pilot system shall be furnished complete and installed on the main valve. It shall include a closing speed control, Y-strainer and isolation ball valves. The differential pressure control valve shall be operationally and hydrostatically tested prior to shipment.

1.3 **Materials of Construction**

The main valve body and bonnet shall be ductile iron per ASTM A536, Grade 65-45-12. End connections shall be <ANSI B16.42 Class 150# flange > <ANSI B16.42 Class 300# flange > <ANSI B1.20.1 threaded > <grooved ends >. All ferrous surfaces shall be coated with a minimum of 4 mils of an NSF-61 approved epoxy. The main valve seat ring shall be bronze. Elastomers (diaphragms, resilient seats and O-rings) shall be Buna-N. The control pilot shall be bronze. The speed control and isolation ball valves shall be brass and control line tubing shall be copper.

1.4 **Operating Conditions**

The differential pressure control valve shall be suitable for controlling the pressure differential at <X> psid at flow rates ranging from <X to X> gpm.