



Model 114-1E ▲



The OCV Model 114-1E is a control valve specifically designed for aircraft refueling service. Known as either a refueling or a hydrant control valve, it performs the following functions:

- ▶ Opens and closes electrically via a solenoid pilot.
- ▶ While open, modulates to control downstream pressure at a predetermined set point.
- ▶ Closes rapidly to prevent undue pressure buildup due to a rapid reduction in demand.

SERIES FEATURES

- ▶ Electrical deadman control
- ▶ Pressure reducing pilot senses valve outlet or pressure compensating venturi
- ▶ High capacity surge control minimizes pressure buildup on reduction of flow
- ▶ Opening speed control
- ▶ Automatically opens for downstream thermal relief or defueling
- ▶ Equipped with visual indicator to monitor valve position
- ▶ Can be maintained without removal from the line
- ▶ Factory tested and can be pre-set to your requirements

OPERATION

The two-way, normally closed solenoid, wired into the deadman control system, closes the main valve when deenergized. Energizing the solenoid opens the valve and allows it to come under control of the pressure reducing pilot. The reducing pilot responds to changes in pressure and causes the main valve to do the same. The net result is a constant modulating action of the pilot and main valve to hold the downstream pressure constant. The pilot system is equipped with an opening speed control.

In the event of a sudden decrease in flow, downstream pressure will increase. The normally closed surge control pilot opens on the increased pressure, causing the main valve to move further closed at a much faster rate than would be accomplished through the normal control circuit. As a result, pressure buildup is minimized.

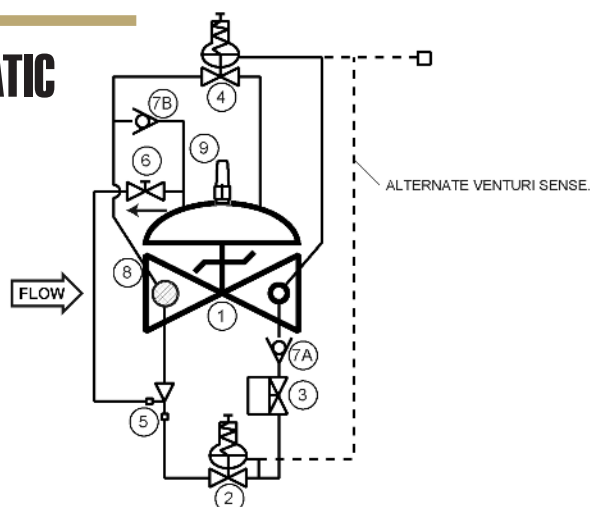
In the event downstream pressure becomes higher than upstream pressure, the valve will automatically open to provide thermal pressure relief or defueling flow.

COMPONENTS

The Model 114-1E consists of the following components, arranged as shown on the schematic diagram:

- 1.) Model 65 Basic Valve Assembly
- 2.) Model 1340 Pressure Reducing Pilot
- 3.) Model 451 Two-Way Solenoid Pilot, N.C.
- 4.) Model 1330 or 2470 Surge Control Pilot
- 5.) Model 126 Ejector
- 6.) Model 141-3 Flow Control Valve (opening speed control)
- 7.) Model 141-1 Check Valve
- 8.) Model 123 Inline Strainer
- 9.) Model 155L Visual Indicator

SCHEMATIC



RECOMMENDED INSTALLATION

- ▶ Install the valve with adequate space above and around the valve to facilitate servicing. Refer to the Dimension Table.
- ▶ Valve should be installed with the bonnet (cover) at the top, particularly 8" (DN200) and larger valves, and any valve with a limit switch.
- ▶ Shut-off valves should be installed upstream and downstream of the control valve. These are used to isolate the valve during start-up and maintenance.
- ▶ Install a pressure gauge downstream of the valve to enable adjustment to the required pressure setting. This gauge may be installed in the downstream side port of the valve body.
- ▶ Make necessary pressure sensing connections to venturi if used.
- ▶ Following main valve installation, the solenoid must be wired into the user's deadman control system. This is a simple two-wire (plus ground) connection.

MAX. PRESSURE (The pressures listed here are maximum working pressures at 100°F)

END CONNECTIONS

Model 114-1E (Aviation Fueling) METRIC



SIZES

Screwed Ends -	1 1/4" - 3" (DN32 thru DB80)
Grooved Ends -	1 1/2" - 4" (globe) (DN40 thru DN100) 1-1/2" - 4" (angle) (DN40 thru DN100)
Flanged Ends -	1 1/4" - 24" (globe) (DN32 thru DN600) 1 1/4" - 16" (angle) (DN32 thru DN600)

FLUID OPERATING TEMPERATURE RANGE

(Valve Elastomers)

Buna-N -40°C to 82.22°C

Viton -6.67°C to 110°C

Fluorosilicone -40°C to 65.56°C

EPDM -17.78°C to 110°C

SPRING RANGES (outlet setting and surge control setting)

3 - 2.1 bar, 1.4 - 5.5 bar, 1.38-13.79 bar, 6.9 - 20.7 bar

SOLENOID

Enclosure: Explosion Proof NEMA 4X, 6P, 7, 9

Body: Brass, Stainless Steel

Voltages: 24, 120, 240, 480 VAC; 12, 24 VDC

Note: working pressures of solenoids vary greatly, consult factory on application of OCV Model 114-1E valves.

MATERIALS Consult factory for others.

Body/Bonnet: Ductile Iron (epoxy coated), Carbon Steel

(epoxy coated), Stainless Steel, Aluminum

Seat Ring: Stainless Steel, Bronze

Stem: Stainless Steel, Monel

Spring: Stainless Steel

Diaphragm: Buna-N, Viton (Nylon reinforced)

Seat Disc: Buna-N, Viton

Pilot: Stainless Steel, Bronze

Other pilot system components:

Stainless Steel, Bronze/Brass

Tubing & Fittings: Stainless Steel, Copper/Brass

SPECIFICATIONS (Typical Aviation Fueling Application)

The refueling control valve shall function to reduce a higher upstream pressure to a constant, lower downstream pressure regardless of fluctuations in supply or demand. The valve shall be equipped with a two-way solenoid valve that will allow the valve to open when energized. The valve shall also be equipped with a high capacity surge control pilot to close the valve quickly in the event of sudden reduction in flow. The valve will also open automatically in the event of pressure reversal.

DESIGN

The refueling control valve shall be a single-seated, line pressure operated, di