

The **Smith Meter® Model 215 Digital Control Valve** is a high-performance, wafer-sphere valve with a solenoid-controlled pneumatic/hydraulic actuator.

When used in conjunction with one of the Smith Meter® Electronic Valve Controllers (e.g., Model SS1, Accu-Load, or MiniLoad), a Model 215 Valve provides precise, trouble-free, low pressure drop, preset loading, and/or flow control of virtually any flowing liquid. The Model 215 is particularly well suited for applications on heavy fuel oils or lube oils where viscosity limits the use of hydraulic valves.

## Features

- **Operation is independent of fluid viscosity and pressure** to assure proper control under virtually all operating conditions.
- **Wide fluid compatibility** can be assured by proper selection of valve-wetted materials.
- **Fail-safe operation** since valves are spring-loaded fail-to-close.
- **Pre-wired, explosion-proof junction box** supplied as standard.
- **Main valve meets NACE MR-01-75 requirements.**

## Options

- **Pneumatic or Hydraulic Actuation.**
- **Pressure regulator.**
- **Pressure gauge.**
- **Limit switches.**
- **Hydraulic Power Pack.**

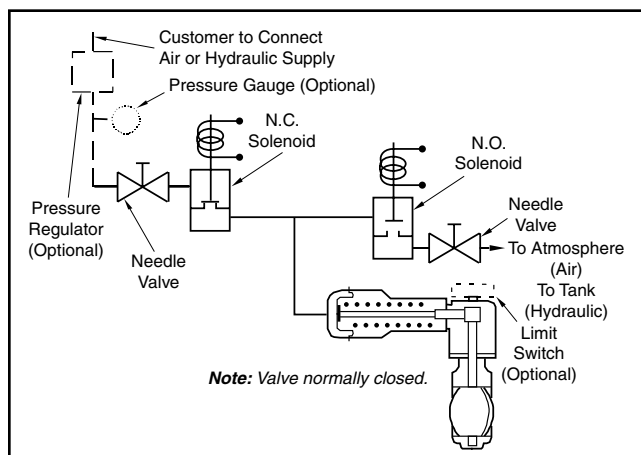


Figure 1 – Model 215 Valve Schematic



3" Model 215

## Operation

The valve schematic in *Figure 1* illustrates the simplicity of the solenoid-controlled actuator system of the Model 215 Valve. The normally closed (N.C.) and normally open (N.O.) solenoids, located on the pressure and relief lines (respectively) of the actuator, control the operation of the valve. Opening the pressure line and closing the relief line, by energizing both solenoids, allows high pressure air or hydraulic fluid to enter the actuator, pushing the diaphragm and opening the valve. Conversely, de-energizing both solenoids allows the high pressure in the actuator to relieve to atmosphere or back to the hydraulic reservoir, permitting the actuator spring to close the valve. Closing off both the pressure and relief lines (energizing the N.O. solenoid only) locks the valve in place. The needle valve settings control the valve opening and closing speeds.

## **Specifications** (For standard Wafer Sphere Type 215 Valve)

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### **Main Valve**

Type: High-performance, wafer-sphere valve – standard.  
Sizes: 3" to 12", installed between Class 150 ANSI RF companion flanges (supplied by others).

Operating Pressures: 285 psig (Class 150 ANSI) – standard. Other pressures available on request.

Operating Temperatures: -20°F (-29°C) to 100°F (38°C)<sup>1</sup>.

### **Materials of Construction:**

Body – Carbon Steel  
Disk and Shaft – Stainless Steel  
Seat – TFE (Teflon)  
Other materials available on request.  
Meets NACE MR-01-75 requirements.

### **Actuator**

Type: Spring – diaphragm

### **Materials of Construction:**

Body – Carbon steel  
Diaphragm – Buna-N

Air Supply: Clean, dry air or gaseous nitrogen.

Hydraulic Supply: Clean Hydraulic Fluid, Dextron II or equivalent.

Operating Pressure: 100 psig maximum, 60-85 psig normal.

Operating Temperature: -20°F (-29°C) to 150°F (68°C).

### **Needle Valve**

Material: Brass – standard  
Stainless Steel – optional

### **Tubing and Fittings**

Material: Steel – standard  
Stainless Steel – optional

### **Optional Equipment**

- Pressure Regulator: 0-250 psi (air only)
- Pressure Gauge: 0-160 psi
- Optional Limit Switches: Two SPDT, UL-listed, CSA certified FM approved. (NEMA 4, 7 Groups C and D, and 9 Groups E, F, and G) for combined watertight and hazardous location design. Switches are rated at 15A with 125/250 Vac and 0.5A dc resistive.

### ■ Hydraulic Power Pack

- 110/240 VAC 50/60 Hz Single Phase.
- 1 HP Explosion Proof Motor – Class I, Div. I Groups C&D.
- 3.0 GPM gear pump for fast response.
- Hydraulic Supply and Return Manifolds – Drives up to 6 valve actuators (Ref. Smith 215 Series Valves). Size 3/8" SAE for supply and 1/2" SAE for return.
- 5 Gallon Reservoir – with top filler/breather, drain plug and sight-level (small footprint).
- Supply Pressure Regulator – with adjustable set point 0 to 200 psig with liquid filled gauge.
- On Demand – Pump activates only when valve control is needed, used in conjunction with an AccuLoad or other preset controller.

\* Consult factory on valves larger than 4".

### **Solenoids**

Explosion-proof, UL-listed and CSA-certified for NEMA 4 and 7, Groups C and D, for use in watertight and hazardous locations.

Type: 2-way normally closed on pressure line  
2-way normally open on exhaust line

### **Materials of Construction:**

Standard – Brass with Buna-N disk  
Optional – Stainless Steel with Viton disk for service in corrosive atmosphere

Operating Pressure: 85 psi maximum

Operating Temperature: -40°F (-40°C) to 180°F (82°C)

Voltage: Standard – 102-120 Vac 60 Hz  
94-110 Vac 50 Hz  
204-240 Vac 60 Hz  
188-220 Vac 50 Hz

Optional – 20-25 Vdc  
10.2-12.6 Vdc

Other voltages, consult factory

Applications: Open or closed position indication for signaling devices, panel light operation, etc.

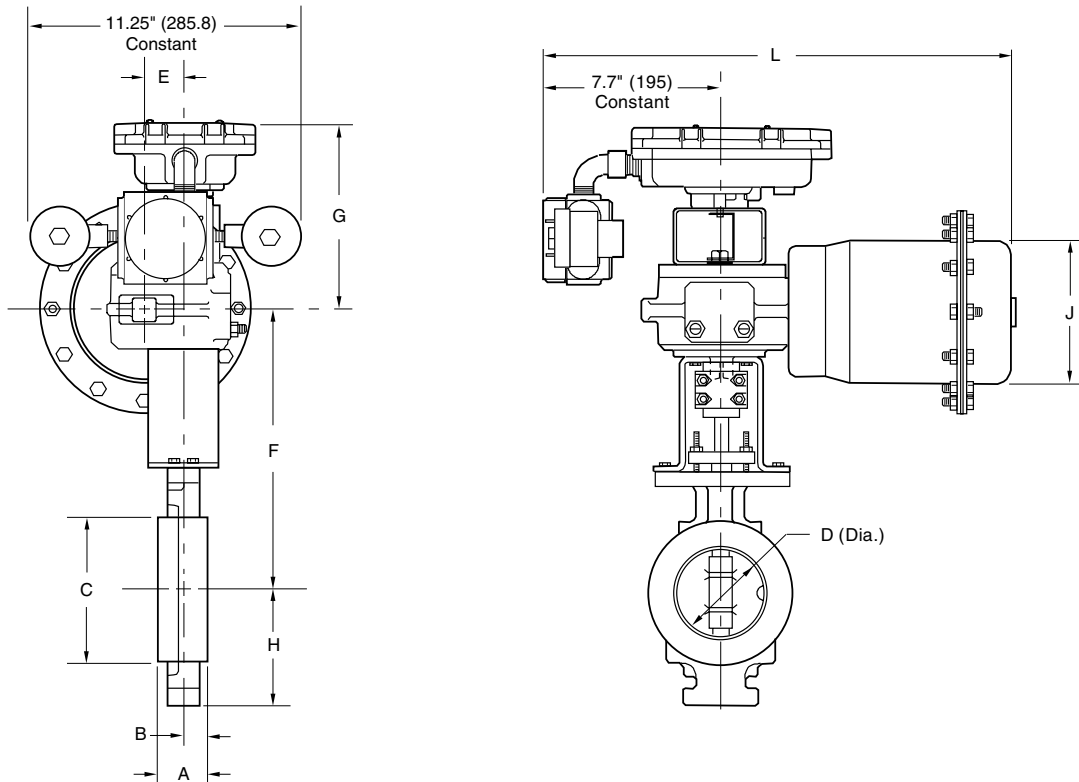
Valve open position limiting to facilitate prompt valve closure in dedicated service where an SS1 Controller or AccuLoad is not required.

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<sup>1</sup> Higher temperatures available with decrease in maximum working pressure.

## Dimensions

Inches (mm)



**Note:** Dimensions – Inches to the nearest tenth (millimeters to the nearest whole mm), each independently dimensioned from respective engineering drawings.

Inches (mm)

Valve Size	A	B	C	D	E	F	G	H	J	L	Cv	Actuator Air Swept Volume (in <sup>3</sup> )	Typical Number <sup>2</sup> of Preset Deliveries per Cylinder of GN <sub>2</sub> <sup>3</sup>
3"	1.9" (49)	1.1" (27)	5.0" (127)	2.9" (73)	1.7" (42)	10.9" (277)	8.2" (207)	4.4" (113)	8.9" (227)	21.9" (558)	165	66	3,000
4"	2.1" (54)	1.2" (30)	6.2" (157)	3.8" (95)	1.7" (42)	11.4" (290)	8.2" (207)	4.9" (125)	8.9" (227)	21.9" (558)	400	66	3,000
6"	2.3" (57)	1.9" (33)	8.5" (216)	5.6" (142)	2.1" (53)	13.2" (337)	8.3" (212)	5.9" (149)	10.9" (273)	24.2" (616)	1,050	133	1,500
8"	2.5" (64)	1.4" (35)	10.6" (270)	7.4" (188)	2.7" (67)	15.4" (391)	8.8" (222)	7.6" (194)	12.6" (319)	26.4" (670)	2,200	265	750
10"	2.8" (71)	1.6" (41)	12.8" (324)	9.3" (236)	3.4" (86)	18.8" (478)	9.2" (235)	9.2" (235)	15.0" (381)	30.4" (786)	3,300	531	375
12"	3.2" (81)	1.9" (48)	15.0" (381)	11.2" (284)	1.8" (44)	18.6" (471)	9.2" (235)	10.8" (273)	15.0" (381)	30.4" (786)	5,100	531	375

<sup>2</sup> Based on using air at a rate of one full actuation at 45 psig for each preset delivery.

<sup>3</sup> One standard cylinder of gaseous nitrogen (GN<sub>2</sub>) contains 300 standard cubic feet.

Editorial change included in SS03010 Issue/Rev. 0.6 (2/08):  
Page 1: EDITORIAL CHANGE – footnote (1) moved from page 1 to page 2.

The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specifications are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.

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