

# Model 200-30A Solenoid Block Valves

Bulletin SS03034 Issue/Rev. 0.2 (8/12)

## Smith Meter® Valves

The **Smith Meter® Model 200-30A Valve** is hydraulically-operated, electrically-actuated, globe-pattern, solenoid block valve.

### Features

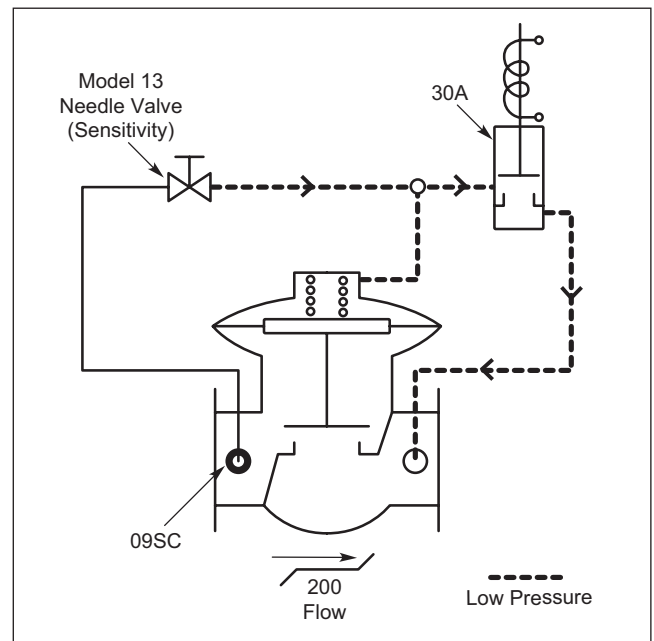
- **Simple construction** – reduces maintenance costs, downtime.
- **Versatile horizontal or vertical applications** – may be combined with other Smith Meter® Pilots to provide multiple control functions.
- **Explosion-proof solenoid** – U.L. listed and CSA approved.
- **Flow to close design** – reduces danger of run away product in the event of a power failure.



## Principle of Operation

The Smith Meter® Model 200-30A is normally closed valve that opens, only when the upstream line pressure in the main valve cover chamber is allowed to vent through the normally closed, electrically-actuated solenoid valve located in the downstream of the valve. With the cover chamber pressure reduced, the force created by differential pressure across the diaphragm less the pressure over the seat area and the valve spring tension opens the valve (Figure 1).

When electrical power to the solenoid is interrupted, the solenoid valve will close and block the vent path through the downstream pilot loop. This allows the upstream line pressure to pressurize the valve cover chamber through the upstream side of the pilot loop, thereby closing the valve and stopping product flow. An adjustable sensitivity valve located in the upstream side of the pilot loop serves as a closing speed control (Figure 2, page 2).



**Figure 1 – Valve Open Position**

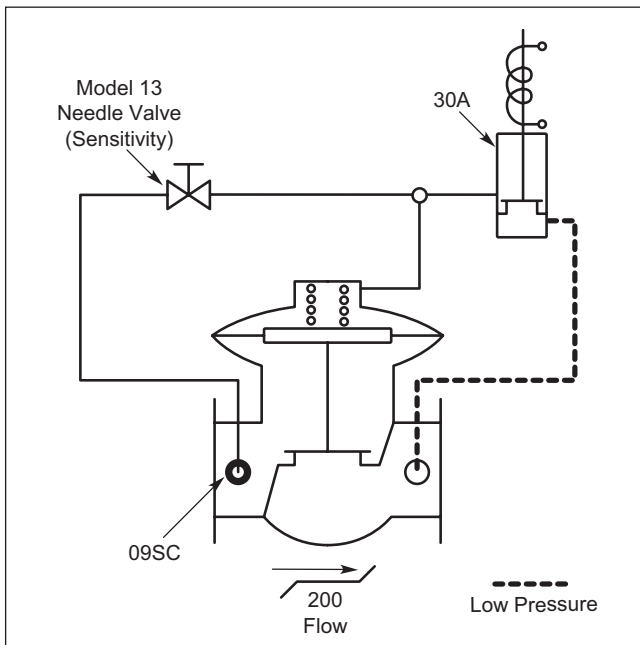


Figure 2 – Valve Closed Position

## Applications

The Smith Meter® Model 200-30A is designed for use as a fail-closed, system permissive that prohibits liquid product flow unless the solenoid valve has been actuated. Power failure or diaphragm rupture will cause these valves to close. The 200-30A is ideally suited for use with the Smith Meter® Model DE-1, Dual Electric Air Release Head for low viscosity (less than 200 SSU) air elimination applications where it is desirable to stop product flow when the presence of air is detected in a metering system.

Any number of control pilots can be combined to provide multiple control functions. Typical combinations include rate of flow control (Models 40A or 42A), back pressure control (Model 60A), and pressure reducing control (Model 50B).

The Model 200-30A incorporates a bare 202 diaphragm actuated valve, a Model 09SC strainer, a Model 13 needle valve, and a two-way normally closed Model 30A solenoid valve. The valve is available in sizes 2" through 6".

## Specifications

### Nominal Flow Ratings

Size	Flow		Cv
	gpm (U.S.)	lpm	
2"	130	492	50
3"	420	1,600	133
4"	600	2,250	204
6"	1,000	3,750	436

### Maximum Product Viscosity

200 SSU (40 mPa·s)<sup>1</sup>.

Above 200 SSU, consult factory.

### Pressure Rating/Connections<sup>2, 3, 4</sup>

Class 150 ASME, 285 psi (19.6 bar).

Class 300 ASME, 300 psi (20.7 bar).

### Temperature Range

Valve Elastomer	Temperature Range <sup>2, 5</sup>
Buna-N	-20°F to 200°F (-28°C to 93°C)
LS (Low Swell) Buna <sup>5</sup>	-20°F to 200°F (-28°C to 93°C)
Viton	-20°F to 350°F (-28°C to 177°C)

### Power Requirements

<b>Standard:</b>	110 Vac, 50 Hz 120 Vac, 60 Hz
<b>Optional:</b>	220 Vac, 50 Hz 240 Vac, 60 Hz 12 Vdc 10% 24 Vdc 10%

For other voltages, consult factory.

### Watts

AC: 20.1

DC: 10.6

## Approvals

U.L. listed, Class I, Group D, CSA approved.

<sup>1</sup> 1 mPa·s = 1 cP.

<sup>2</sup> Pressure ratings are based on temperatures of -20°F to 100°F (-28°C to 38°C). For operation at higher temperatures, the maximum working pressure may be derated.

<sup>3</sup> PED requirements limit applications to liquids with maximum vapor pressures of .5 bar above atmospheric pressure, at maximum allowable temperature.

<sup>4</sup> PED required for all European countries. Equipment must be manufactured by Ellerbek, Germany facility.

<sup>5</sup> For temperature outside these ranges, consult factory.

## Dimensions

Inches (mm)

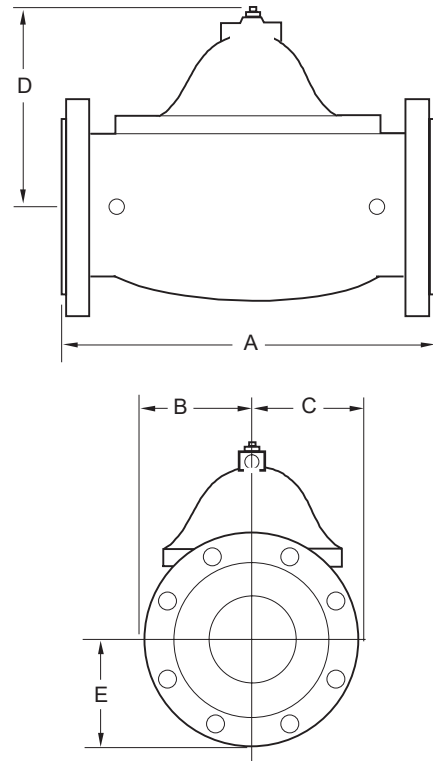
Size	A Class 150 ASME Flange	A Class 300 ASME Flange	B <sup>+</sup>	C <sup>+</sup>	D <sup>+</sup>	E
2"	8.0 (203)	8.5 (216)	8.0 (203)	4.0 (102)	7.5 (140)	3.0 (76)
3"	11.0 (279)	11.75 (298)	9.5 (241)	4.0 (102)	9.5 (241)	4.1 (105)
4"	13.5 (343)	14.25 (362)	9.5 (241)	4.9 (124)	9.5 (241)	4.5 (114)
6"	17.0 (432)	17.88 (454)	11.00 (279)	6.6 (168)	12.5 (318)	5.5 (40)

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

+ Pilots and tubing will be within these dimensions.

## Weight – Net

Size	lb (kg)
2"	45 (20)
3"	82 (37)
4"	135 (61)
6"	257 (116)



## Materials of Construction

Bare Valves/ Pilots	Body	Internals	Seals/Packing
202/203	Cast Steel	Bronze, Stainless Steel, Carbon Steel, Ductile Iron	Low Swell Buna <sup>+</sup> , Viton, or Buna-N
09SC	Carbon Steel	304 Stainless Steel Mesh	—
Needle Valve Model 13	Carbon Steel	Stainless, Carbon Steel	PTFE <sup>6</sup>
30A	400 Stainless Steel		Viton
Tubing/Fittings			
Standard	Carbon Steel		
Optional	300 Series Stainless Steel		

+ Standard

<sup>6</sup> Polytetrafluoroethylene (PTFE).

Revisions included in SS03034 Issue/Rev. 0.2 (8/12):

Page 2. Revised drawings; Added PED footnote; Revised materials of construction - removed Internals option, "No Bronze Epoxy Coating", from Model 202/203. Page 2: Power Requirements, Standard and Optional revised.

Editorial Change: 11/13 - Seals/Packing reference was changed to PTFE.

March 2019 - updated branding and contact information.

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.