

SV - Safety Shutoff Valve with Proof of Closure 1/2" NPT - 2" NPT

SV/614 Series
SV-D/614 Series
SV-DLE/614 Series

DUNGS[®]
Combustion Controls



Normally closed automatic shutoff valve with proof of closure and the following approvals.

CSA Certified

- ANSI Z21.21 • CSA 6.5
- Marked C/I
- File # 1350312

FM Approved

- Class 7400
- File # 3014562

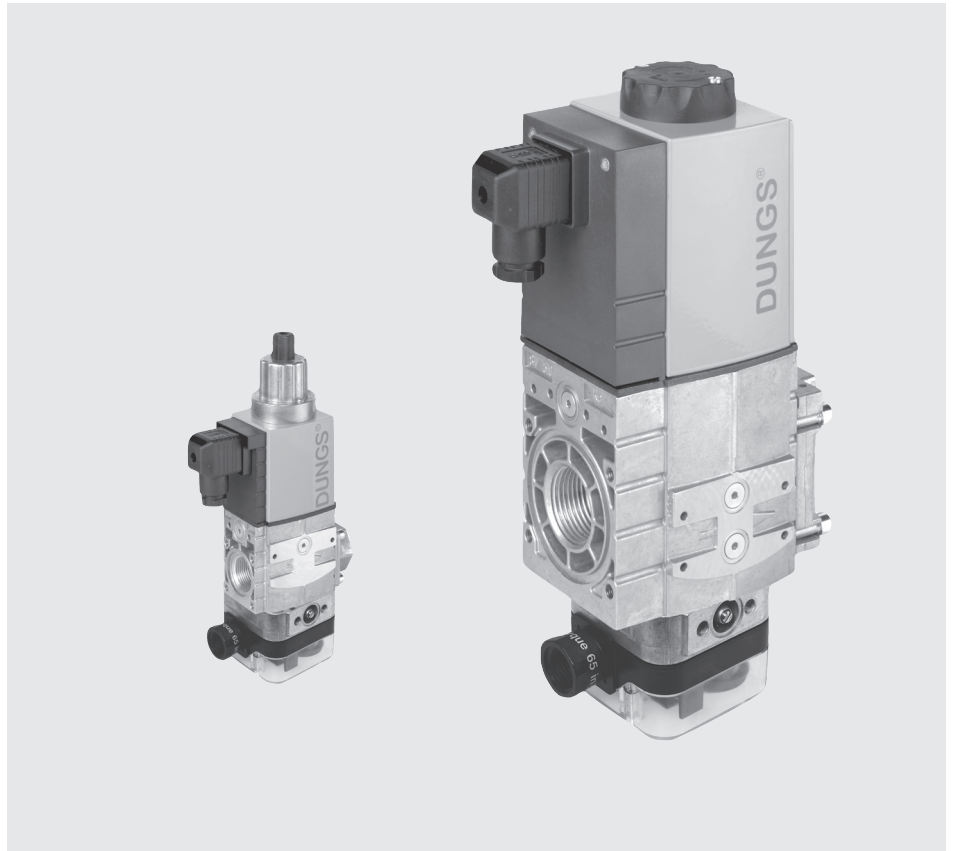
Commonwealth of Massachusetts Approved Product

- Approval code G1-1107-35
- Gas Safety Shutoff Valve

Codes and Standards

This product is intended for installations covered by but not limited to NFPA 86, NFPA 37, NFPA 160, ANSI Z83.4/ CSA 3.7, ANSI Z83.18/CSA 4.9, ANSI Z21.13, CSD-1, UL 2200, CAN1-3.1, CGA 3.2, CSA 3.8, CSA B149.1, CSA B149.3 CSA B149.6.

**DUNGS is an ISO 9001
manufacturing facility.**



Technical Description

The SV... automatic safety shutoff valve is a single-stage automatic shut-off valve for gas burners and gas burning appliances:

- Double-seated valve with proof of closure.
- Max. operating pressure up to 10 PSI (700 mbar)
- SV & SV-D: fast-open/fast-close
- SV-DLE: slow-open with adjustable initial lift, fast closing
- Main flow adjustment
- Pipe thread on the inlet side, threaded flange on outlet side
- Threaded flange on the inlet side optional
- High flow rates
- DMV modular mount accessories can be used in most cases

Application

The SV... is recommended for industrial and commercial heating applications that require an automatic shutoff valve incorporating proof of closure. The SV... is suitable for dry natural gas, propane, butane, air and inert gases. Suitable for up to 0.1% by volume, dry H₂S.

A "dry" gas has a dew point lower than +15 °F and its relative humidity is less than 60 %.

SV.../614 Single-stage automatic shutoff valve, fast-opening, fast-closing. Incorporates proof of closure.

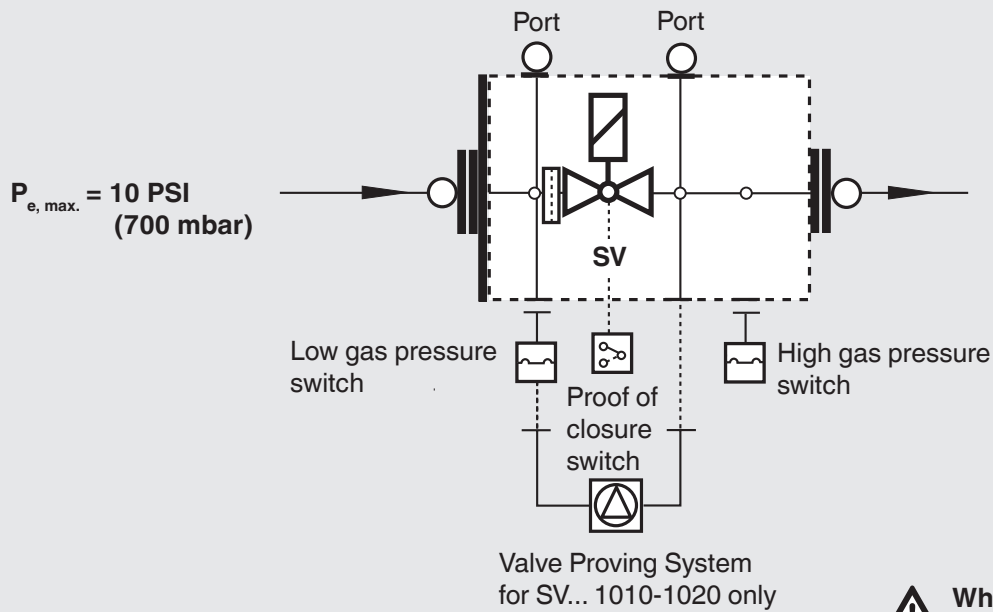
SV-D.../614 Single-stage automatic shutoff valve, fast opening, fast closing. Adjustable max flow. Incorporates proof of closure.

SV-DLE.../614 Single-stage automatic shutoff valve, slow opening, fast closing. Adjustable max flow and adjustable initial lift. Incorporates proof of closure.

Specifications

Model	SV 1005	SV 1007	SV 1010	SV 1012	SV 1015	SV 1020
Size (NPT)	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
	Pipe thread on the inlet side, threaded flange on outlet side					
Max. operating pressure	10 PSI (700 mbar)					
Max. body pressure	15 PSI (1000 mbar)					
Max. close off pressure	15 PSI (1000 mbar)					
Electrical ratings (+10 % / -15 %)	120 VAC @ 50 - 60 Hz					
Power ratings	See page 5.					
Enclosure ratings	NEMA Type 4 for NEMA 4 indoor only NEMA Type 12					
Electrical connection	DIN-connector with 1/2" NPT conduit adapter					
Operating time	100 % duty cycle					
Closing time	< 1 s					
Opening time (to max. flow)	SV... & SV-D/614 SV-DLE.../614			< 1 s Adjustable to approx. 10 to 20 s at 70 °F		
Initial lift adjustment	SV-DLE.../614 ONLY			0 to 70 % of total flow; 0 to 35% of stroke		
Max. flow adjustment	SV-D & SV-DLE.../614 ONLY			0 to 100 % of total flow; 0 to 100% of stroke. When adjusted to low flows, flow repeatability upon opening is +/-15%.		
Materials in contact with gas	Housing:			Aluminium, Steel; free of non-ferrous metals		
	Sealings on valve seats: NBR-based rubber					
Ambient temperature rating	-40 °F to +140 °F (-40 °C to +60 °C)					
Installation position	Safety shut off valve from vertically upright to horizontal					
Test ports / Pressure switch mounting ports	G 1/8 ISO 228 ports available. See page 3 and 4 for details.					
Gas strainer (standard)	Installed in the housing upstream (23 mesh)					
Proof of closure switch Factory mounted and calibrated	SPDT switch with indication lamps: AC max. 10 A resistive @ 120 VAC AC max. 8 A inductive @ 120 VAC					
Valve proving system	Requires VPS 504; mounts directly to either side of SV... 1010 - 1020 only					

SV... 10../614



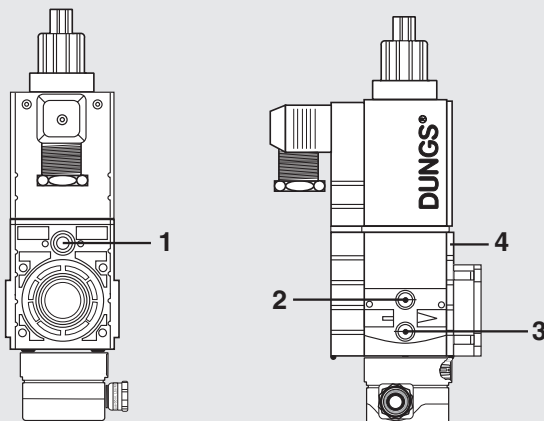
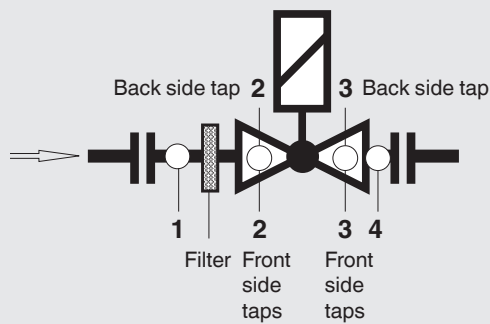
! When an accessory is added to the SV..., it may not be possible to mount other devices.

Test Ports

G1/8 ISO 228 test ports available on both sides of the valve. Each side has one test port upstream (2), one downstream (3) of the valve seat. One Inlet (1) and outlet (4) of valve body. The SV... 1010, 1012, 1015, and 1020 have one outlet (5) on valve flange. The G 1/8 test nipple (# 219008) can be screwed into any of the test ports.

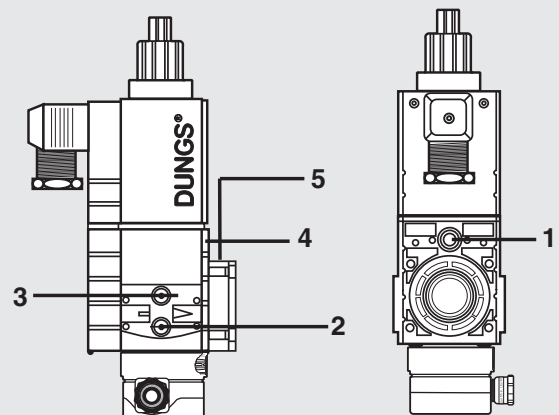
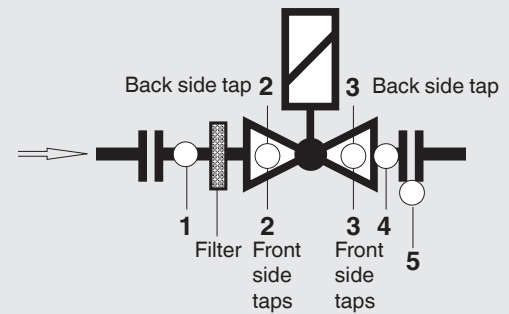
! The position of the side taps #2 and #3 on the SV... 1005/1007 are not the same as on the SV... 1010-1020 valves.

SV...: 1005, 1007



SV...: 1010, 1012

SV...: 1015, 1020

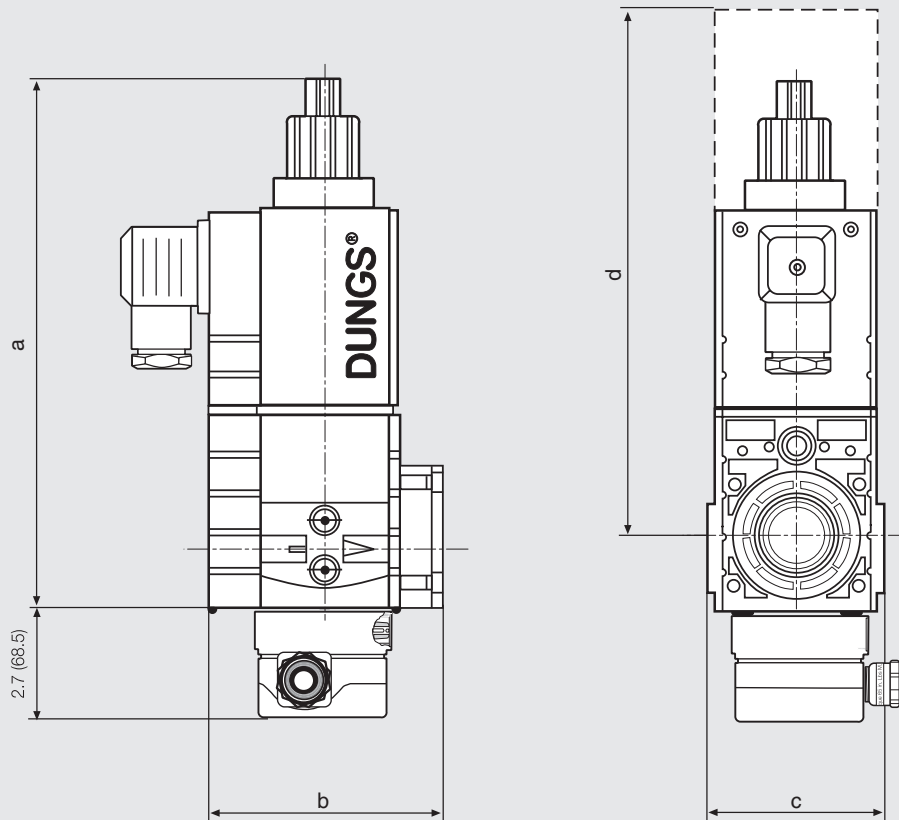


Feature	SV-D Model	SV Model		SV-DLE Model		
	1005/1007	1010/1012	1015/1020	1005/1007	1010/1012	1015/1020
Main flow adjustment	X	-	-	X	X	X
Slow opening	-	-	-	X	X	X
Strainer	X	X	X	X	X	X
Ports for field mountable gas pressure switch	X	X	X	X	X	X
GAO, GMH, GML...A2 valve inlet (Port 1)	- 3	X	X	- 3	X	X
GAO, GMH, GML...A2 valve outlet (Port 4)	- 3	(X)	(X)	- 3	(X)	(X)
GAO, GMH, GML...A2 inlet flange (Optional Flange)	-	X	X	-	X	X
GAO, GMH, GML...A2 outlet flange (Port 5)	-	X	X	-	X	X
GAO, GMH, GML...A2 both sides upstream (port 2)	X	X	X	X	X	X
GAO, GMH, GML...A2 both sides downstream (port 3)	-	X	X	-	X	X
Flange installed on outlet	X	X	X	X	X	X
Flange installed on inlet	(X)	(X)	(X)	(X)	(X)	(X)
Ignition gas flange NPT 1/2 (225043)	-	(X)	(X)	-	(X)	(X)
1/4" NPT Adapter both sides upstream (225047)	(X)	(X)	(X)	(X)	(X)	(X)
1/4" NPT Adapter both sides downstream (225047)	-	(X)	(X)	-	(X)	(X)
Valve proving system VPS 504 S06 (221073)	1	(X)	(X)	1	(X)	(X)
G 1/8 Test Nipple (219008)	2	2	2	2	2	2

-	Not available / Not possible
X	Standard
(X)	Optional
1	Alternative valve proving system: VDK 200 (216-352)
2	Fits into any test port
3	No adapter exists to mount a switch at this port

Flow (CFH) of natural gas, s.g. 0.65 at 60 °F with 1 in. W.C. pressure drop	
SV... 1005/614	335
SV... 1007/614	450
SV... 1010/614	900
SV... 1012/614	1300
SV... 1015/614	1950
SV... 1020/614	2250

Dimensions SV... inch (mm)




d = Space required for replacing solenoid

Type	Order No.	Pressure _{max.} [PSI]	Size	Dimensions [inch]				Rating [VA]	Weight [lbs]
				Dimensions [mm]					
				a	b	c	d		
SV-D 1005/614	277110	10	NPT 1/2	6.0	3.8	2.4	8.5	20	3.3
				152	96	62	215		
SV-D 1007/614	277111	10	NPT 3/4	6.0	3.8	2.4	8.5	20	3.3
				152	96	62	215		
SV 1010/614	267074	10	NPT 1	9.2	4.6	3.4	10.9	25	9.3
				233	116	87	277		
SV 1012/614	267078	10	NPT 1 1/4	9.2	4.6	3.4	10.9	25	9.3
				233	116	87	277		
SV 1015/614	267071	10	NPT 1 1/2	12.0	6.5	4.5	14.6	45	16.1
				305	165	115	370		
SV 1020/614	267080	10	NPT 2	12.0	6.5	4.5	14.6	45	16.1
				305	165	115	370		
SV-DLE 1005/614	267077	10	NPT 1/2	8.1	3.8	2.4	8.5	20	3.5
				205	96	62	215		
SV-DLE 1007/614	267072	10	NPT 3/4	8.1	3.8	2.4	8.5	20	3.5
				205	96	62	215		
SV-DLE 1010/614	267075	10	NPT 1	10.5	4.6	3.4	10.9	25	9.3
				266	116	87	277		
SV-DLE 1012/614	267079	10	NPT 1 1/4	10.5	4.6	3.4	10.9	25	9.3
				266	116	87	277		
SV-DLE 1015/614	267070	10	NPT 1 1/2	12.0	6.5	4.6	14.6	45	16.1
				305	165	116	370		
SV-DLE 1020/614	267081	10	NPT 2	12.0	6.5	4.6	14.6	45	16.1
				305	165	116	370		

Valve Accessories			
*Flange kit	Size	NPT Part #	Rp Part #
SV... 1005 / 1007	1/2	242650	242220
SV... 1005 / 1007	3/4	242651	242221
SV... 1010 / 1012	1/2	242653	242223
SV... 1010 / 1012	3/4	242654	242224
SV... 1010 / 1012	1	242655	242225
SV... 1010 / 1012	1 1/4	242656	242226
SV... 1010 / 1012	1 1/2	245563	243817
SV... 1015 / 1020	1	242657	242227
SV... 1015 / 1020	1 1/4	242658	242228
SV... 1015 / 1020	1 1/2	242659	242229
SV... 1015 / 1020	2	242660	242230

*Mounting kit includes 1 flange, 4 bolts and 1 O-ring.

 The SV... 1010, 1012, 1015 and 1020 flanges are the same as the DMV flanges, however the mounting screws used for the SV and DMV are different. **DO NOT** interchange flange mounting screws.

Additional Accessories

VPS 504

Valve proving system approved by some authorities having jurisdiction in lieu of vent valve and “proof of closure”. (NFPA 86) NEMA Type 12 only.

GAO/GMH/GML A2 pressure switch DMK butterfly control valve

Mounts directly downstream of DMV to modulate gas flow. Requires DMA actuator.

DMA actuator.

Mounts directly to DMK to modulate gas flow. 12 and 30 second actuators available. NEMA Type 4 cover available.

Adapters

- 1/4” NPT adapter (225047)
- 1/2” NPT Pilot gas adapter; Check flow requirements. (225043)
- G 1/8” Test nipple (219008)

SV... supplied with downstream flange and mounting kit as standard.

Flange kit is only needed if a flange is desired on the inlet of the valve.

Pressure drop for other gases

To determine the pressure drop when using a gas other than natural gas, use the flow formula below and f value located in the table below to determine

the “corrected” flow rate in CFH through the valve for the other gas used. For example, when using propane, divide the volume (CFH) of propane required for the application by the calculated value

f (f = 0.66 for propane). Use this “corrected” flow rate and the flow curve on the next page to determine pressure drop for propane.

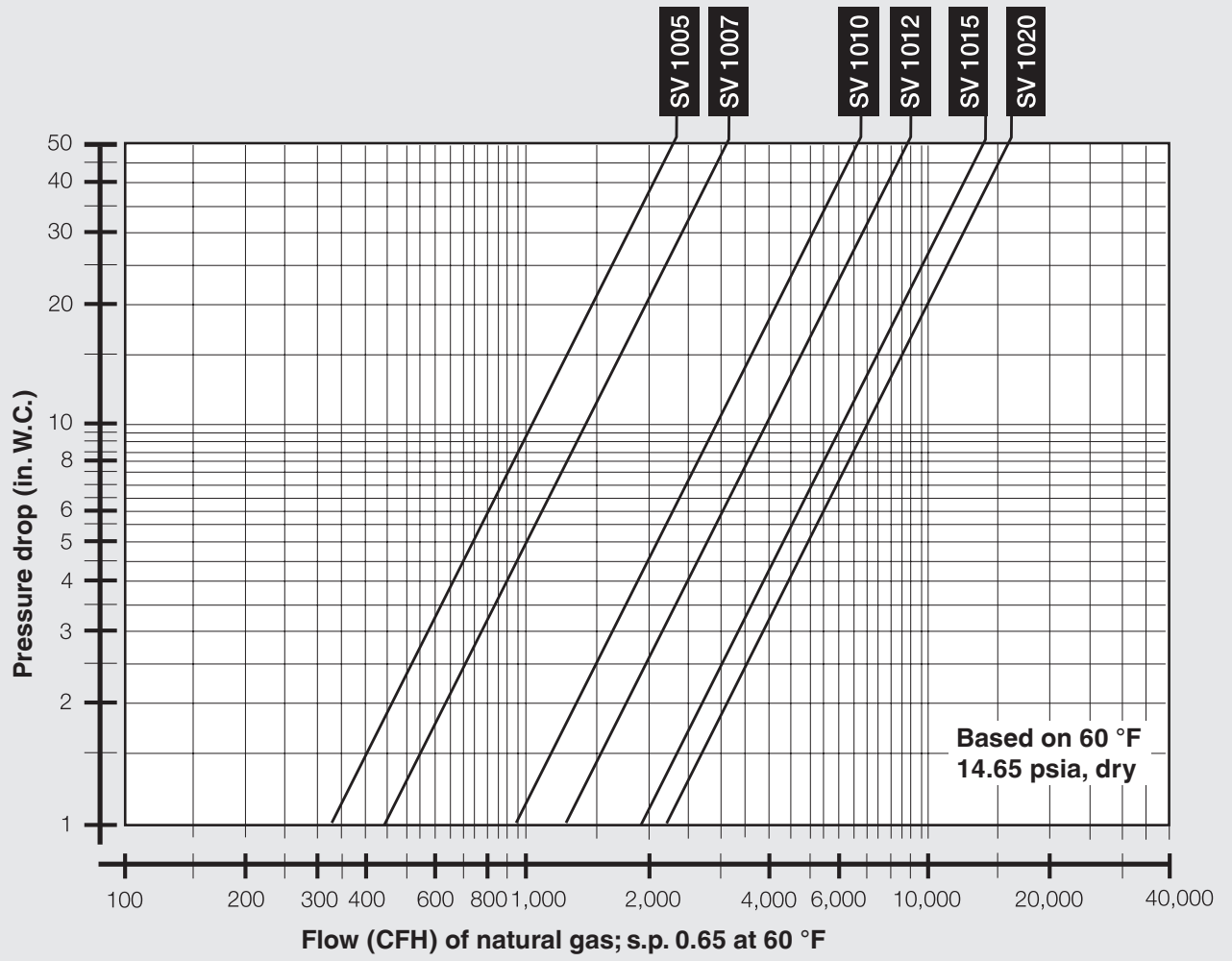
Determining equivalent flow through valves using another gas

$$\dot{V}_{\text{gas used}} = \dot{V}_{\text{Natural gas}} \times f$$

$$f = \sqrt{\frac{\text{Density of Natural gas}}{\text{Density of gas used}}}$$

Type of gas	Density [kg/m³]	s.g.	f
Natural gas	0.81	0.65	1.00
Butane	2.39	1.95	0.58
Propane	1.86	1.50	0.66
Air	1.24	1.00	0.80

Flow curve



**SV - Safety Shutoff Valve
with Proof of Closure
1/2" NPT - 2" NPT**

**SV/614 Series
SV-D/614 Series
SV-DLE/614 Series**

DUNGS®
Combustion Controls

We reserve the right to make any changes in the interest of technical progress.

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