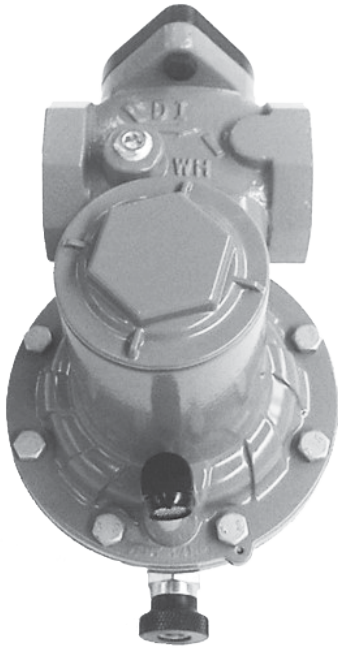
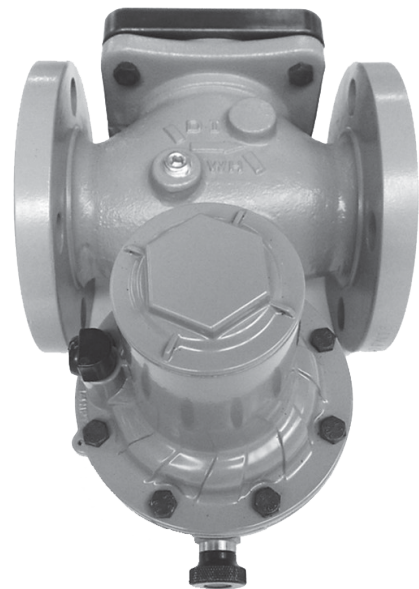


April 2021

## VS100 Series Slam-Shut Device



TYPE VS110



TYPE VS120

Figure 1. VS100 Series Slam-Shut Device

### Features

- **Medium and High Capacity Body Sizes Available**
- **Quick Response Time**
- **Ductile Iron and Steel Body Construction**
- **Complies with the Pressure Equipment Directive (PED) 2014/68/EU Requirements**
- **Overpressure and Underpressure trips available**
- **Modular Body construction allows for adding regulator module in the future with no pipe charges**

### Introduction

The VS100 Series slam-shut device is designed to shut off the flow of gas to the downstream system in the event of outlet pressure rising above or falling below the predefined levels.

The VS100 Series consists of the following:

- A body with a removable orifice, enclosed by a bonnet.
- A VSX4 or VSX8 Series controller.

# VS100 Series

## Specifications

The Specifications section lists the specifications for the VS100 Series slam-shut device. The following information is stamped on the label of VS100 Series: Type and Class, Maximum Outlet Pressure and Spring Range. Additional operating information is located on the slam-shut device label.

### Available Configurations

See Table 4

### Connections

**Slam-Shut Vent:** 1/4 NPT

**External Sensing Line:** 1/4 NPT

### Body Material

Ductile Iron (GS)

Steel (WCC)

### Body Sizes and End Connection Styles

See Table 8

### Maximum Emergency Inlet Pressure (PS)<sup>(1)(2)(3)(4)</sup>

20.0 bar / 290 psig

### Maximum Operating Inlet Pressure (P<sub>u,max</sub>)<sup>(1)(2)(3)</sup>

16.0 bar / 232 psig

### Operating Temperature (TS)<sup>(1)(5)</sup>

**PED:** -20 to 66°C / -4 to 150°F

**Non-PED:** -30 to 66°C / -20 to 150°F

### Response Time (t<sub>a</sub>)

< 1 second

### Functional Class

**A:** OPSO and UPSO

**B:** OPSO only

### CE Marking

0062

### Orifice Diameter

**Medium Capacity Body (MC):** 19 mm / 0.75 in.

**High Capacity Body (HC):** 30 mm / 1.18 in.

### Valve Plug Size

**Medium Capacity Body (MC) Ø:** 24 mm / 0.94 in.

**High Capacity Body (HC) Ø:** 39 mm / 1.53 in.

### Position Indicator

Extended stem visible in center of reset button  
refer to VSX4 and VSX8 Series controller  
Instruction Manual

### Resetting Trip Mechanism

Manually after fault rectification

### Casing Material

Aluminum

### Pressure Detection

External

### Approximate Shipping Weights

See Table 8

### Flow Capacity

See Tables 6 and 7

### Flow Coefficient and Power Loss

#### Symbols

Q = Natural gas flow rate in Nm<sup>3</sup>/h

P<sub>u</sub> = Absolute inlet pressure in bar

C<sub>g</sub> = Flow rate coefficient

C<sub>1</sub> = Body shape factor

#### Flow Coefficients

TYPE	ORIFICE		BODY	C <sub>g</sub>
	mm	In.		
VS110 (VSX4)	19	0.75	1 NPT	306
			1-1/4 NPT	307
			1-1/2 NPT	321
VS120 (VSX8)	30	1.18	1-1/4 NPT	789
			1-1/2 NPT	840
			2 NPT	856
			NPS 2 Flanged	881

#### Pressure Drop

$$\Delta P = \frac{P_u - \sqrt{P_u^2 - 4 \left( \frac{Q}{1.05 \times C_g} \right)^2}}{2}$$

#### Designed, Tested and Evaluated Consistent with:

EN334, EN 14382, ASME B16, ASME Section VIII  
DIV I, ASTM B117 (Corrosion Resistance)

#### Option

**Wire Seal:** The VS100 Series can be ordered with an optional tamper-proof lock wire to preclude unauthorized access to the adjustment springs.

**Reed Switch:** An optional remote notification switch can be installed offering the capability to remotely notify the operator should VS100 Series shut off occur. Refer to VSX4/8 Instruction Manual, D103127X012 for more information.

1. The pressure/temperature limits in this Bulletin or any applicable standard limitation should not be exceeded.

2. EN334 Integral Strength (IS) 6 bar / 87 psig. Used where inlet rating must equal outlet rating per code.

3. EN334 Differential Strength (DS) 16 bar / 232 psig. Used where DS ratings required per code.

4. EN334 Specific Maximum Allowable Pressure (PSd) 6 bar / 87 psig. Used where PSd ratings are required per code.

5. Product has passed Emerson testing for shutoff and trip function at -40°C/°F.

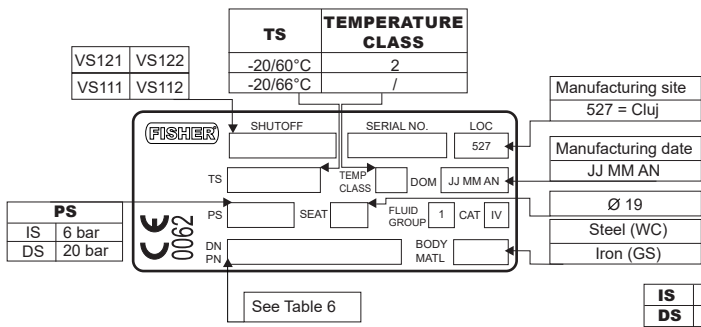


Figure 2. PED VS100 Series Label

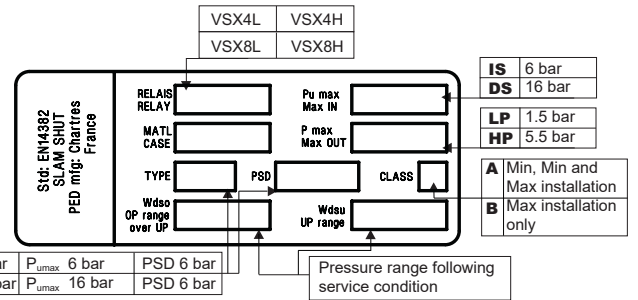


Figure 3. EN 14382 VSX4 and VSX8 Series Label

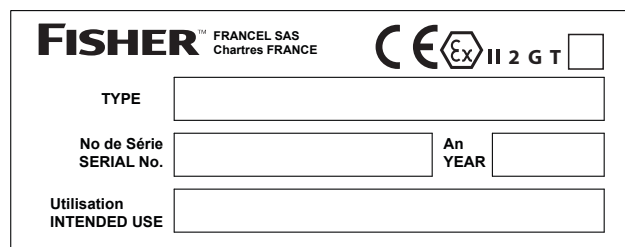


Figure 4. Nameplate for explosive atmosphere if ATEX assembled

Table 1. PED Information

TYPE	DESCRIPTION	PED DIRECTORY	FLUID GROUP
VS100	Regulator body with VSX4 or VSX8 Series controller	IV	Groups 1 and 2 according to 2014/68/EU, 1st and 2nd family gas according to EN 437 or other gases (compressed air and nitrogen). The gas must be non-corrosive, clean (filtration on inlet side necessary) and dry.

Table 2. Directive ATEX Information

TYPE	CLASSIFICATION	ATEX ASSEMBLIES	ATEX LABELLING
VSX4 or VSX8	Non-electrical equipment	Not falling under the 2014/34/EU Directive	No
VSX8 with reed contact	Non-electric equipment equipped with an electrical device falling under the scope of the ATEX Directive 2014/34/EU	Constitutes an assembly according to the 2014/34/EU Directive	CE Ex II 2 GT

Table 3. Accuracy According to EN 14382 - VS100 Series

ACCURACY GROUP (AG)	$P_d < 35 \text{ mbar} / 0.507 \text{ psig}$	$35 \text{ mbar} \leq P_d < 60 \text{ mbar} / 0.507 \text{ psig} \leq P_d < 0.87 \text{ psig}$	$60 \text{ mbar} \leq P_d < 100 \text{ mbar} / 0.87 \text{ psig} \leq P_d < 1.5 \text{ psig}$	$P_d \geq 100 \text{ mbar} / 1.5 \text{ psig}$
AG <sub>min</sub>	30	15	10	5
AG <sub>max</sub>	10	10		

Note: Stable inlet pressure AG<sub>min</sub> = AG 10 ( $P_d < 60 \text{ mbar} / 0.87 \text{ psig}$ ) and AG 5 ( $P_d > 60 \text{ mbar} / 0.87 \text{ psig}$ ), AG<sub>max</sub> = AG 5

Table 4. VS100 Series Configurations

TYPE	BODY SIZE	ORIFICE DIAMETER		CONTROLLER	OVERPRESSURE MONITORING RANGE ( $W_{dc}$ )		UNDERPRESSURE MONITORING RANGE ( $W_{du}$ )	
		mm	In.		mm	psig	mm	psig
VS111	Medium Capacity	19	0.75	VSX4L	30 to 1600	0.44 to 23.2	5 to 750	0.07 to 10.9
VS112				VSX4H	1100 to 5500	16.0 to 79.8	500 to 2800	7.25 to 40.6
VS121	High Capacity	30	1.18	VSX8L	30 to 1600	0.44 to 23.2	5 to 750	0.07 to 10.9
VS122				VSX8H	1100 to 5500	16.0 to 79.8	500 to 2800	7.25 to 40.6

# VS100 Series

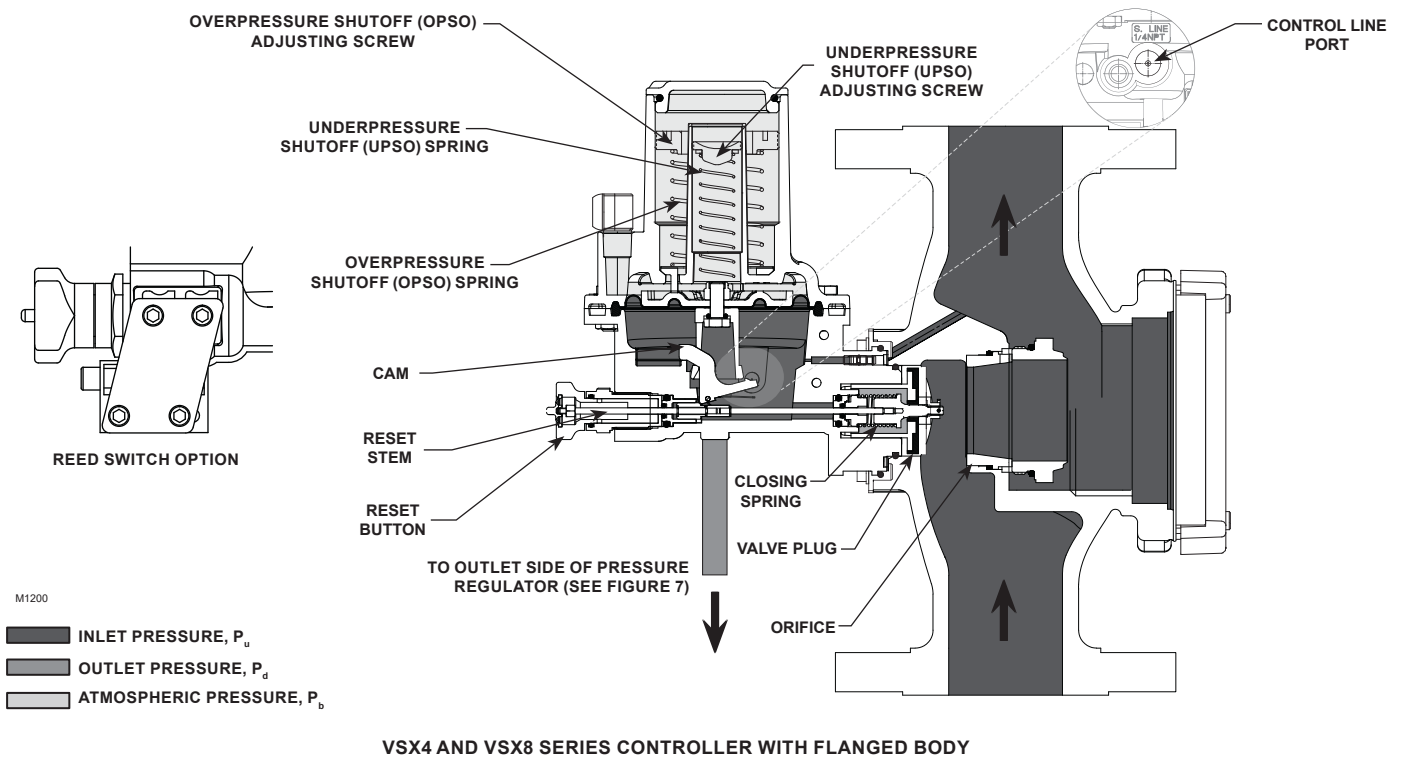


Figure 5. Typical VS100 Series Operational Schematic

## Principle of Operation

The pressure in the zone to be protected (generally the pipeline on the outlet side of the pressure regulator and situated after the slam-shut device (see Figure 5) activates the VSX4 and VSX8 Series controller.

The pressure measuring element of the VSX4 and VSX8 Series controller consists of a diaphragm that senses downstream pressure. The downstream pressure is controlled by the regulator. The top side of the VSX4 and VSX8 Series diaphragm encounters the force imposed by the overpressure shut-off spring and underpressure shut-off spring.

When the downstream pressure increases above the overpressure shut-off (OPSO) setting, the diaphragm moves up.

When the downstream pressure decreases below the underpressure shut-off (UPS) setting, the diaphragm moves down.

Both of these actions result in the rotation of the cam and the release of the reset pin.

The valve plug spring moves the valve plug against the regulator port, stopping the flow of gas.

Before opening the valve plug, an equal pressure balance on inlet and outlet sides is required.

Refer to the VSX4 and VSX8 Series Instruction Manual, Form 5867. Using the reset button, activate the internal bypass, then rearm the valve plug in accordance with the Manual Reset Procedure. Rearming and pressure balancing are achieved at the same time.

**Table 5a. Overpressure Shut-off OPSO Ranges Only, psig**

REGULATOR		SLAM SHUT DEVICE				
Type	Typical Setpoint	Type (Maximum Operating Inlet)	Over Pressure Shut-off (OPSO)	Factory Set	Spring Part Number	Spring Color
			Set Range	OPSO		
	psig		psig	psig		
VS111 VS121	7 in. w.c.	VSX4L VSX8L (125 psi)	12 to 24 in. w.c.	22 in. w.c.	GF02168X012	Brown
	11 in. w.c.		16 in. w.c. to 1.6 psig	25 in. w.c.	GF02169X012	Red
	14 in. w.c.		24 in. w.c. to 2.8 psig	1.1	GF02170X012	Orange
	1		1.4 to 4.1	2	GF02171X012	Pink
	2		2.0 to 7.3	3.5	GF02172X012	Green
	3		2.0 to 7.3	5	GF02172X012	Green
	5		3.2 to 11.0	7	GF02173X012	Silver
VS111 VS121	10	VSX4L VSX8L (232 psi)	5.8 to 21	12	GF04353X012	Yellow
	7 in. w.c.		12 to 24 in. w.c.	22 in. w.c.	GF02168X012	Brown
	11 in. w.c.		16 in. w.c. to 1.6 psig	25 in. w.c.	GF02169X012	Red
	14 in. w.c.		24 in. w.c. to 2.8 psig	1.1	GF02170X012	Orange
	1		1.4 to 4.1	2	GF02171X012	Pink
	2		2.0 to 7.3	3.5	GF02172X012	Green
	3		2.0 to 7.3	5	GF02172X012	Green
VS112 VS122	5	VSX4H VSX8H (232 psi)	3.2 to 11.0	7	GF02173X012	Silver
	10		5.8 to 21	12	GF04353X012	Yellow
	15		13.1 to 43.5	19	GF02173X012	Silver
	20		13.1 to 43.5	25	GF02173X012	Silver
	30		13.1 to 43.5	35	GF02173X012	Silver
VS112 VS122	40	VSX4H VSX8H (232 psi)	23.2 to 79.8	45	GF04353X012	Yellow

**Table 5b. Overpressure Shut-off OPSO Ranges Only, bar**

REGULATOR		SLAM SHUT DEVICE				
Type	Typical Setpoint	Type (Maximum Operating Inlet)	Over Pressure Shut-off (OPSO)	Factory Set	Spring Part Number	Spring Color
			Set Range	OPSO		
	bar		bar	bar		
VS111 VS121	17.4 mbar	VSX4L VSX8L (125 psi / 8.62 bar)	29.9 to 59.8 mbar	54.8 mbar	GF02168X012	Brown
	27.4 mbar		39.9 mbar to 0.11 bar	62.3 mbar	GF02169X012	Red
	34.9 mbar		59.8 mbar to 0.19 bar	0.08	GF02170X012	Orange
	0.07		0.10 to 0.28	0.14	GF02171X012	Pink
	0.14		0.14 to 0.50	0.24	GF02172X012	Green
	0.21		0.14 to 0.50	0.34	GF02172X012	Green
	0.35		0.22 to 0.76	0.48	GF02173X012	Silver
VS111 VS121	0.69	VSX4L VSX8L (232 psi / 16.0 bar)	0.40 to 1.45	0.83	GF04353X012	Yellow
	17.4 mbar		29.9 to 59.8 mbar	54.8 mbar	GF02168X012	Brown
	27.4 mbar		39.9 mbar to 0.11 bar	62.3 mbar	GF02169X012	Red
	34.9 mbar		59.8 mbar to 0.19 bar	0.08	GF02170X012	Orange
	0.07		0.10 to 0.28	0.14	GF02171X012	Pink
	0.14		0.14 to 0.50	0.24	GF02172X012	Green
	0.21		0.14 to 0.50	0.34	GF02172X012	Green
VS112 VS122	0.35	VSX4H VSX8H (232 psi / 16.0 bar)	0.22 to 0.76	0.48	GF02173X012	Silver
	0.69		0.40 to 1.45	0.83	GF04353X012	Yellow
	1.03		0.90 to 3.0	1.30	GF02173X012	Silver
	1.38		0.90 to 3.0	1.72	GF02173X012	Silver
	2.07		0.90 to 3.0	2.40	GF02173X012	Silver
VS112 VS122	2.76	VSX4H VSX8H (232 psi / 16.0 bar)	1.60 to 5.50	3.10	GF04353X012	Yellow

# VS100 Series

**Table 5c. Overpressure and Underpressure Shut-off OPSO/USPO Ranges, psig**

REGULATOR			SLAM SHUT DEVICE								
Type	Typical Setpoint	Type (Maximum Operating Inlet)	Under Pressure Shut-off (USPO)	Spring Part Number	Spring Color	Over Pressure Shut-off (OPSO)	Spring Part Number	Spring Color	Factory Set		
			Set Range			Set Range			USPO	Adjusted OPSO Range	OPSO
			psig			psig			psig	psig	psig
VS111 VS121	7 in. w.c.	VSX4L VSX8L (125 psi)	3 to 12 in. w.c.	ERAA05835A0	White	16 to 29 in. w.c.	GF02168X012	Brown	3 in. w.c.	19 in. w.c. to 1.2 psig	22 in. w.c.
	11 in. w.c.		3 to 12 in. w.c.	ERAA05835A0	White	16 to 29 in. w.c.	GF02168X012	Brown	6 in. w.c.	22 in. w.c. to 1.3 psig	25 in. w.c.
	14 in. w.c.		4 in. w.c. to 1.1 psig	T14169T0012	Blue	20 in. w.c. to 1.8 psig	GF02169X012	Red	9 in. w.c.	1.0 to 2.1	1.1
	1		10 in. w.c. to 2.3 psig	T14169T0012	Blue	1.2 to 3.2	GF02169X012	Red	14 in. w.c.	1.7 to 3.7	2
	2		10 in. w.c. to 2.3 psig	T14169T0012	Blue	1.2 to 3.2	GF02170X012	Orange	1	2.2 to 4.2	3.5
	3		1.5 to 7.3	T14170T0012	Silver	2.6 to 5.6	GF02171X012	Pink	2	4.6 to 7.6	5
	5		1.5 to 7.3	FA142869X12	Orange Stripe	2.6 to 5.6	GF02171X012	Pink	3	5.6 to 8.6	7
10	1.5 to 7.3	FA142869X12	Orange Stripe	3.5 to 8.2	GF02172X012	Green	5	8.5 to 13.2	12		
VS111 VS121	7 in. w.c.	VSX4L VSX8L (232 psi)	3 to 12 in. w.c.	ERAA05835A0	White	18 to 30	GF02168X012	Brown	3 in. w.c.	21 in. w.c. to 1.2 psig	22 in. w.c.
	11 in. w.c.		3 to 12 in. w.c.	ERAA05835A0	White	18 to 30	GF02168X012	Brown	6 in. w.c.	24 in. w.c. to 1.3 psig	25 in. w.c.
	14 in. w.c.		4 in. w.c. to 1.1 psig	T14169T0012	Blue	25 to 1.9	GF02169X012	Red	9 in. w.c.	1.2 to 2.2	1.1
	1		10 in. w.c. to 2.3 psig	T14169T0012	Blue	1.2 to 3.2	GF02170X012	Orange	14 in. w.c.	1.7 to 3.7	2
	2		10 in. w.c. to 2.3 psig	T14170T0012	Silver	1.2 to 3.2	GF02170X012	Orange	1	2.2 to 4.2	3.5
	3		1.5 to 7.3	FA142869X12	Orange Stripe	2.6 to 5.6	GF02171X012	Pink	2	4.6 to 7.6	5
	5		1.5 to 7.3	FA142869X12	Orange Stripe	2.6 to 5.6	GF02171X012	Pink	3	5.6 to 8.6	7
10	1.5 to 7.3	FA142869X12	Orange Stripe	3.5 to 8.2	GF02172X012	Green	5	8.5 to 13.2	12		
15	1.5 to 10.9	T14171T0012	Olive	6.7 to 13.5	GF02173X012	Silver	7	13.7 to 20.5	19		
VS112 VS122	20	VSX4H VSX8H (232 psi)	7.3 to 29.0	FA142869X12	Orange Stripe	15.2 to 22.8	GF02171X012	Pink	10	25.2 to 32.8	25
30	7.3 to 29.0		FA142869X12	Orange Stripe	18.1 to 33.4	GF02172X012	Green	15	33.1 to 48.4	35	

**Table 5d. Overpressure and Underpressure Shut-off OPSO/USPO Ranges, bar**

REGULATOR			SLAM SHUT DEVICE								
Type	Typical Setpoint	Type (Maximum Operating Inlet)	Under Pressure Shut-off (USPO)	Spring Part Number	Spring Color	Over Pressure Shut-off (OPSO)	Spring Part Number	Spring Color	Factory Set		
			Set Range			Set Range			USPO	Adjusted OPSO Range	OPSO
			bar			bar			bar	bar	bar
VS111 VS121	17.4 mbar	VSX4L VSX8L (125 psi / 8.62 bar)	7.47 to 30.0 mbar	ERAA05835A0	White	39.9 to 72.2 mbar	GF02168X012	Brown	7.47 mbar	47.3 mbar to 0.08 bar	54.8 mbar
	27.4 mbar		7.47 to 30.0 mbar	ERAA05835A0	White	39.9 to 72.2 mbar	GF02168X012	Brown	14.9 mbar	54.8 mbar to 0.09 bar	62.3 mbar
	34.9 mbar		9.96 mbar to 0.76 bar	T14169T0012	Blue	49.8 mbar to 0.12 bar	GF02169X012	Red	22.4 mbar	0.07 to 0.15	0.08
	0.07		24.9 mbar to 0.16 bar	T14169T0012	Blue	0.08 to 0.22	GF02169X012	Red	34.9 mbar	0.12 to 0.26	0.14
	0.14		24.9 mbar to 0.16 bar	T14169T0012	Blue	0.08 to 0.22	GF02170X012	Orange	0.07	0.15 to 0.29	0.24
	0.21		0.10 to 0.50	T14170T0012	Silver	0.18 to 0.39	GF02171X012	Pink	0.14	0.32 to 0.52	0.35
	0.35		0.10 to 0.50	FA142869X12	Orange Stripe	0.18 to 0.39	GF02171X012	Pink	0.21	0.39 to 0.59	0.48
0.69	0.10 to 0.50	FA142869X12	Orange Stripe	0.24 to 0.57	GF02172X012	Green	0.35	0.59 to 0.91	0.83		
VS111 VS121	17.4 mbar	VSX4L VSX8L (232 psi / 16.0 bar)	7.47 to 30.0 mbar	ERAA05835A0	White	44.8 to 74.7	GF02168X012	Brown	7.47 mbar	52.3 mbar to 0.08 bar	54.8 mbar
	27.4 mbar		7.47 to 30.0 mbar	ERAA05835A0	White	44.8 to 74.7	GF02168X012	Brown	14.9 mbar	59.8 mbar to 0.09	62.3 mbar
	34.9 mbar		9.96 mbar to 0.76 bar	T14169T0012	Blue	62.3 mbar to 0.13 bar	GF02169X012	Red	22.4 mbar	0.08 to 0.15	0.08
	0.07		24.9 mbar to 0.16 bar	T14169T0012	Blue	0.08 to 0.22	GF02170X012	Orange	34.9 mbar	0.12 to 0.26	0.14
	0.14		24.9 mbar to 0.16 bar	T14170T0012	Silver	0.08 to 0.22	GF02170X012	Orange	0.07	0.15 to 0.29	0.24
	0.21		0.10 to 0.50	FA142869X12	Orange Stripe	0.18 to 0.39	GF02171X012	Pink	0.14	0.32 to 0.52	0.35
	0.35		0.10 to 0.50	FA142869X12	Orange Stripe	0.18 to 0.39	GF02171X012	Pink	0.21	0.39 to 0.59	0.48
0.69	0.10 to 0.50	FA142869X12	Orange Stripe	0.24 to 0.57	GF02172X012	Green	0.35	0.59 to 0.91	0.83		
1.03	0.10 to 0.75	T14171T0012	Olive	0.46 to 0.93	GF02173X012	Silver	0.48	0.95 to 1.41	1.31		
VS112 VS122	1.38	VSX4H VSX8H (232 psi / 16.0 bar)	0.50 to 2.0	FA142869X12	Orange Stripe	1.05 to 1.57	GF02171X012	Pink	0.69	1.74 to 2.26	1.72
2.07	0.50 to 2.0		FA142869X12	Orange Stripe	1.25 to 2.30	GF02172X012	Green	1.03	2.28 to 3.34	2.41	

## Capacity Information

Tables 6 and 7 provide natural gas regulating capacities at selected inlet pressures and outlet pressure settings for the VS100 Series, which includes configurations that include the slam-shut device. Flows are in Sm<sup>3</sup>/h (16°C and 1.01325 bar) and SCFH (60°F and 14.7 psia) of 0.6 specific gravity natural gas.

To determine equivalent capacities for air, propane, butane or nitrogen, multiply the capacity value in

the tables by the following appropriate conversion factor: 0.775 for air, 0.628 for propane, 0.548 for butane or 0.789 for nitrogen. For gases of other specific gravities, multiply the given capacity by 0.775 and divide by the square root of the appropriate specific gravity.

The published capacities were obtained using inlet and outlet piping the same size as the regulator body size.

**Table 6. Type VS110 Flow Capacities**

INLET PRESSURE		DIFFERENTIAL PRESSURE (ΔP)		1 NPT		1-1/4 NPT		1-1/2 NPT			
bar	psig	bar	psi	Sm <sup>3</sup> /h	SCFH	Sm <sup>3</sup> /h	SCFH	Sm <sup>3</sup> /h	SCFH		
0.03	0.50	0.02	0.25	36.3	1290	36.3	1290	38.3	1359		
0.05	0.75			36.6	1300	36.9	1310	38.6	1370		
0.07	1			36.9	1310	37.2	1320	38.9	1381		
0.14	2			38.0	1350	38.3	1360	40.2	1426		
0.21	3			39.2	1390	39.4	1400	41.4	1468		
0.34	5			41.4	1470	41.7	1480	43.7	1550		
0.48	7			43.7	1550	43.7	1550	45.9	1628		
0.69	10			46.5	1650	46.8	1660	49.0	1738		
1.03	15			51.0	1810	51.3	1820	53.7	1908		
1.72	25			59.2	2100	59.4	2110	62.2	2208		
3.45	50			75.8	2690	75.8	2690	79.5	2823		
5.17	75			89.3	3170	89.6	3180	93.7	3326		
6.90	100			101	3580	101	3590	106	3762		
10.3	150			121	4290	121	4310	127	4510		
15.5	225			146	5180	146	5200	153	5442		
0.05	0.75	0.03	0.5	51.3	1820	51.3	1820	53.9	1912		
0.07	1			51.5	1830	51.8	1840	54.3	1928		
0.14	2			53.2	1890	53.5	1900	56.1	1991		
0.21	3			54.9	1950	55.2	1960	57.8	2051		
0.34	5			58.0	2060	58.3	2070	61.1	2167		
0.48	7			61.1	2170	61.1	2170	64.2	2277		
0.69	10			65.1	2310	65.4	2320	68.5	2433		
1.03	15			71.5	2540	71.8	2550	75.3	2673		
1.72	25			83.1	2950	83.4	2960	87.2	3097		
3.45	50			106	3770	107	3790	112	3964		
5.17	75			125	4450	126	4460	132	4672		
6.90	100			142	5030	142	5050	149	5287		
10.3	150			170	6040	171	6060	179	6339		
15.5	225			205	7290	206	7310	216	7651		
0.14	2			0.07	1	74.4	2640	74.6	2650	78.2	2774
0.21	3	76.6	2720			76.9	2730	80.6	2861		
0.34	5	81.1	2880			81.4	2890	85.3	3027		
0.48	7	85.4	3030			85.6	3040	89.7	3185		
0.69	10	91.3	3240			91.5	3250	96.0	3407		
1.03	15	101	3570			101	3580	106	3749		
1.72	25	117	4140			117	4160	123	4353		
3.45	50	150	5320			150	5340	157	5584		
5.17	75	177	6280			177	6300	186	6590		
6.90	100	200	7110			201	7130	210	7461		
10.3	150	240	8530			241	8560	252	8952		
15.5	225	290	10,300			291	10,330	304	10,810		
0.48	7	0.34	5			174	6193	175	6213	183	6496
0.69	10					189	6702	189	6724	198	7031
1.03	15					211	7477	211	7501	221	7844
1.72	25			249	8831	250	8860	261	9264		
3.45	50			325	11,550	326	11,587	341	12,116		
5.17	75			387	13,744	388	13,789	406	14,418		
6.90	100			440	15,635	442	15,686	462	16,402		
10.3	150			531	18,858	533	18,919	557	19,782		
15.5	225			644	22,856	646	22,931	675	23,976		
0.83	12			0.69	10	254	9021	255	9050	267	9463
1.03	15					273	9704	274	9736	287	10,180
1.72	25					330	11,722	331	11,760	346	12,297
3.45	50					443	15,720	444	15,771	465	16,491
5.17	75					533	18,912	534	18,973	559	19,839
6.90	100					610	21,644	612	21,715	640	22,705
10.3	150	740	26,277			743	26,362	776	27,565		
15.5	225	901	31,996			904	32,101	945	33,565		

# VS100 Series

**Table 7. Type VS120 Flow Capacities**

INLETPRESSURE		DIFFERENTIALPRESSURE(ΔP)		1-1/4 NPT		1-1/2 NPT		2 NPT		NPS 2 / DN 50 FLANGED			
bar	psig	bar	psi	Sm <sup>3</sup> /h	SCFH	Sm <sup>3</sup> /h	SCFH	Sm <sup>3</sup> /h	SCFH	Sm <sup>3</sup> /h	SCFH		
0.03	0.50	0.02	0.25	94.1	3340	100	3556	102	3624	105	3729		
0.05	0.75			94.9	3368	101	3586	103	3654	106	3761		
0.07	1			95.6	3396	102	3615	104	3684	107	3791		
0.14	2			98.7	3504	105	3730	107	3801	110	3912		
0.21	3			102	3609	108	3842	110	3915	114	4030		
0.34	5			107	3810	114	4057	116	4134	120	4255		
0.48	7			113	4002	120	4260	122	4341	126	4468		
0.69	10			120	4273	128	4549	131	4635	134	4771		
1.03	15			132	4690	141	4993	143	5088	148	5236		
1.72	25			153	5428	163	5779	166	5889	171	6061		
3.45	50			195	6939	208	7387	212	7528	218	7748		
5.17	75			230	8175	245	8704	250	8869	257	9128		
6.90	100			260	9248	277	9845	283	10,033	291	10,326		
10.3	150			312	11,085	332	11,802	339	12,027	349	12,378		
15.5	225			377	13,377	401	14,241	409	14,513	421	14,936		
0.05	0.75	0.03	0.5	132	4701	141	5004	144	5100	148	5249		
0.07	1			134	4740	142	5046	145	5142	149	5292		
0.14	2			138	4893	147	5209	150	5309	154	5464		
0.21	3			142	5042	151	5368	154	5470	159	5630		
0.34	5			150	5327	160	5671	163	5779	168	5948		
0.48	7			158	5598	168	5960	171	6073	176	6250		
0.69	10			168	5981	179	6367	183	6489	188	6678		
1.03	15			185	6570	197	6994	201	7128	207	7336		
1.72	25			214	7612	228	8104	233	8259	239	8500		
3.45	50			274	9742	292	10,372	298	10,570	306	10,878		
5.17	75			323	11,484	344	12,226	351	12,459	361	12,823		
6.90	100			366	12,994	390	13,834	397	14,098	409	14,509		
10.3	150			439	15,581	467	16,589	476	16,905	490	17,398		
15.5	225			530	18,807	564	20,022	575	20,404	592	20,999		
0.14	2			0.07	1	192	6819	205	7260	208	7398	214	7614
0.21	3	198	7033			211	7487	215	7630	221	7853		
0.34	5	210	7441			223	7922	227	8073	234	8308		
0.48	7	221	7828			235	8334	239	8493	246	8741		
0.69	10	236	8375			251	8916	256	9086	263	9352		
1.03	15	260	9215			276	9811	282	9998	290	10,290		
1.72	25	301	10,700			321	11,391	327	11,608	337	11,947		
3.45	50	387	13,726			412	14,613	419	14,892	432	15,327		
5.17	75	456	16,197			486	17,244	495	17,572	509	18,086		
6.90	100	517	18,338			550	19,523	560	19,895	577	20,476		
10.3	150	620	22,003			660	23,425	672	23,872	692	24,569		
15.5	225	748	26,570			797	28,287	812	28,826	836	29,668		
0.48	7	0.34	5			450	15,968	479	17,000	488	17,324	502	17,830
0.69	10					487	17,281	518	18,398	528	18,748	544	19,296
1.03	15					543	19,279	578	20,525	589	20,916	606	21,527
1.72	25			641	22,769	683	24,241	696	24,703	716	25,424		
3.45	50			839	29,780	893	31,705	910	32,308	937	33,252		
5.17	75			998	35,439	1063	37,730	1083	38,448	1115	39,571		
6.90	100			1136	40,315	1209	42,920	1232	43,738	1268	45,015		
10.3	150			1370	48,624	1458	51,767	1486	52,753	1529	54,293		
15.5	225			1660	58,932	1767	62,742	1801	63,937	1854	65,804		
0.83	12			0.69	10	655	23,259	698	24,763	711	25,234	732	25,971
1.03	15					705	25,022	750	26,639	765	27,146	787	27,939
1.72	25					851	30,224	906	32,178	924	32,791	951	33,748
3.45	50					1142	40,533	1216	43,153	1239	43,975	1275	45,259
5.17	75					1374	48,762	1462	51,914	1490	52,903	1534	54,448
6.90	100					1572	55,808	1674	59,415	1706	60,547	1755	62,315
10.3	150	1909	67,752			2032	72,132	2071	73,506	2131	75,652		
15.5	225	2324	82,501			2474	87,833	2521	89,506	2595	92,120		



Dimensions and Weights

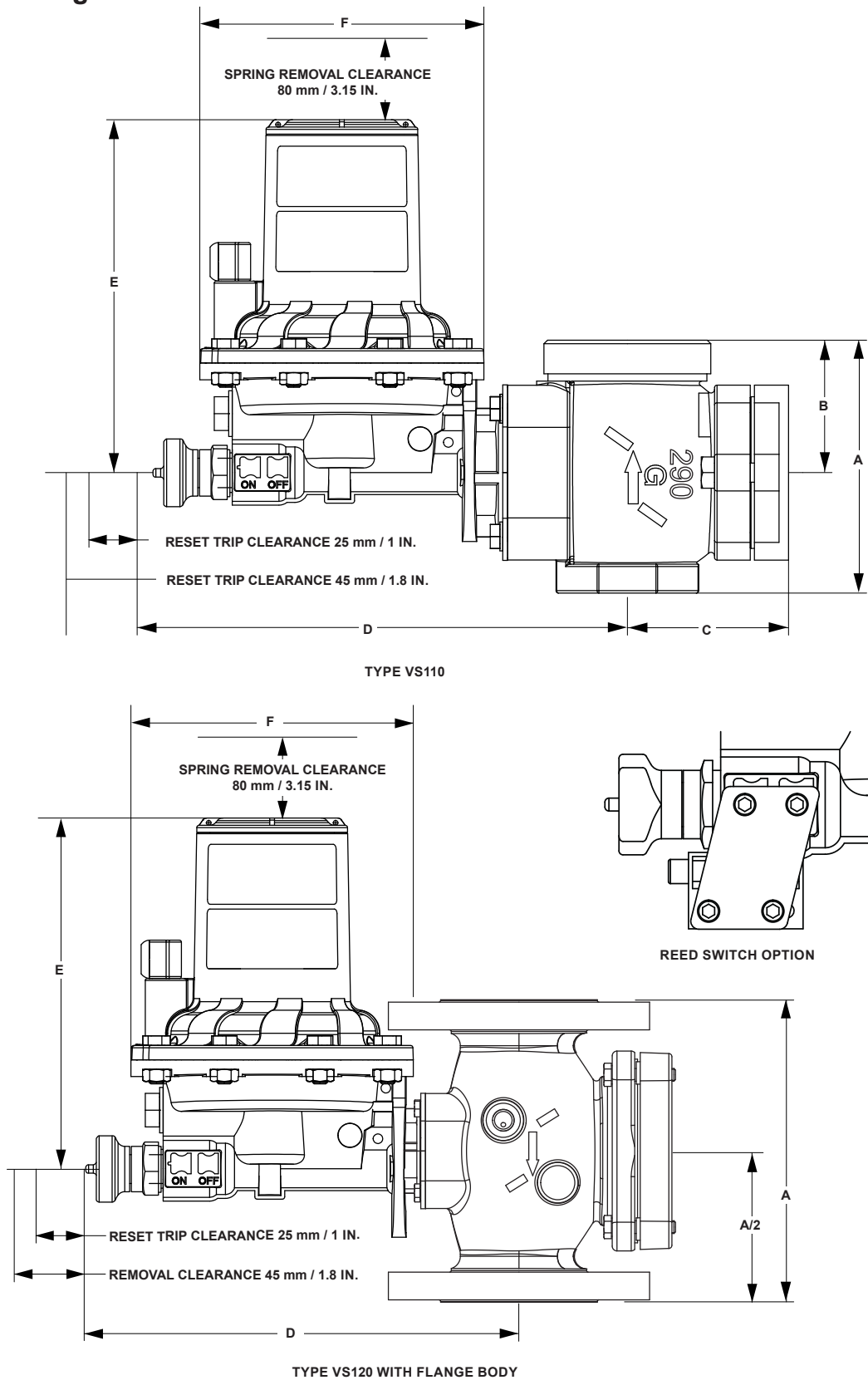


Figure 6. VS100 Series Dimensions

# VS100 Series

**Table 8. VS100 Series Bodies, Dimensions and Weights**

TYPE	BODY MATERIAL	PART NUMBER	INLET SIZE		OUTLET SIZE		END CONNECTION	DIMENSION, mm / IN.						WEIGHT	
			DN	NPS	DN	NPS		A	B	C	D	E	F	kg	lbs
VS111 and VS112 (Medium Capacity)	Ductile Iron	GE26482X012	25	1	57	2-1/4	Rp x GAZ	105 / 4.1	55 / 2.2	67 / 2.6	205 / 8.1	147 / 5.8	118 / 4.7	3.3	7.3
		GE26469X012	32	1-1/4	32	1-1/4	Rp	114 / 4.5	57 / 2.3	46.3 / 1.8	210 / 8.3			3.6	7.9
		GE26470X012	40	1-1/2	40	1-1/2	Rp							3.6	7.9
		GE26463X012	25	1	25	1	NPT	100 / 3.9	50 / 2.0					3.1	6.8
		GE26468X012	25	1	25	1	Rp							3.1	6.8
		GE26465X012	32	1-1/4	32	1-1/4	NPT	114 / 4.5	57 / 2.3					3.6	7.9
		GE26466X012	40	1-1/2	40	1-1/2	NPT							3.6	7.9
	GE44902X012	40	1-1/2	40	1-1/2	PN16 Slip-on	184 / 7.2					6.7	14.8		
	Steel	GE26463X022	25	1	25	1	NPT	100 / 3.9	50 / 2.0	91.4 / 3.6	212.7 / 8.4	147 / 5.8	118 / 4.6	3.1	6.8
		GE26465X022	32	1-1/4	32	1-1/4	NPT	114 / 4.5	57 / 2.3					3.6	7.9
		GE26466X022	40	1-1/2	40	1-1/2	NPT							3.6	7.9
		GE26468X022	25	1	25	1	Rp	100 / 3.9	50 / 2.0					3.1	6.8
		GE26469X022	32	1-1/4	32	1-1/4	Rp	114 / 4.5	57 / 2.3					3.6	7.9
		GE26470X022	40	1-1/2	40	1-1/2	Rp							3.6	7.9
VS121 and VS122 (High Capacity)	Ductile Iron	GE26306X012	32	1-1/4	32	1-1/4	NPT	155 / 6.1	77.5 / 3.1	91.4 / 3.6	212.7 / 8.4	147 / 5.8	118 / 4.6	6.9	15.2
		ERAA02453A1	40	1-1/2	40	1-1/2	NPT							6.9	15.2
		ERAA02437A1	50	2	50	2	NPT							7.1	15.7
		GE26310X012	32	1-1/4	32	1-1/4	Rp							6.9	15.2
		ERAA03878A1	40	1-1/2	40	1-1/2	Rp							6.9	15.2
		ERAA02715A1	50	2	50	2	Rp							7.1	15.7
		GE48292X012	50	2	50	2	CL125FF x CL150FF	191 / 7.5	95.5 / 3.8					13.2	29.1
		ERAA02711A1	50	2	50	2	CL125FF x CL150FF	254 / 10	127 / 5.0					15.8	34.8
		ERAA02718A1	50	2	50	2	CL125FF x CL150FF	267 / 11	133.5 / 5.3					15.8	34.8
		GE48296X012	50	2	50	2	PN10/16	191 / 7.5	95.5 / 3.8					13.2	29.1
	ERAA02719A1	50	2	50	2	PN10/16	254 / 10	127 / 5.0	15.8	34.8					
	Steel	GE26306X022	32	1-1/4	32	1-1/4	NPT	155 / 6.1	77.5 / 3.1	91.4 / 3.6	212.7 / 8.4	147 / 5.8	118 / 4.6	6.9	15.2
		ERAA02453A2	40	1-1/2	40	1-1/2	NPT							6.9	15.2
		ERAA02437A2	50	2	50	2	NPT							7.1	15.7
		GE26310X022	32	1-1/4	32	1-1/4	Rp							6.9	15.2
		ERAA03878A2	40	1-1/2	40	1-1/2	Rp							6.9	15.2
		ERAA02715A2	50	2	50	2	Rp							7.1	15.7
		ERAA02720A2	50	2	50	2	CL150RF							254 / 10	127 / 5.0
ERAA02719A2		50	2	50	2	PN10/16	15.5	34.2							

## Ordering Information

When ordering, complete the ordering guide on this page. Refer to the Specifications section on page 2. Review the description to the right of each

specification and the information in each referenced table or figure. Specify your choice whenever a selection is offered.

## Ordering Guide

### Type (Select One)

- VS111
- VS112
- VS121
- VS122

### Slam-Shut Controller

- VSX4L
- VSX4H
- VSX8L
- VSX8H

### Body Size and End Connection Style (Select One)

#### Medium Capacity, Ductile Iron

- 1 NPT
- 1-1/4 NPT
- 1-1/2 NPT
- DN 25 / NPS 1, Rp x GAZ
- DN 32 / NPS 1-1/4, Rp
- DN 40 / NPS 1-1/2, Rp
- DN 25 / NPS 1, Rp
- DN 40 / NPS 1-1/2, PN 16 slip-on

#### Medium Capacity, WCC Steel

- 1 NPT
- 1-1/4 NPT
- 1-1/2 NPT
- DN 25 / NPS 1, Rp
- DN 32 / NPS 1-1/4, Rp
- DN 40 / NPS 1-1/2, Rp

### High Capacity, Ductile Iron

- 1-1/4 NPT
- 1-1/2 NPT
- 2 NPT
- DN 32 / NPS 1-1/4, Rp
- DN 40 / NPS 1-1/2, Rp
- DN 50 / NPS 2, Rp
- DN 50 / NPS 2, CL125 FF x CL150 FF
- DN 50 / NPS 2, PN 10/16

### High Capacity, WCC Steel

- 1-1/4 NPT
- 1-1/2 NPT
- 2 NPT
- DN 32 / NPS 1-1/4, Rp
- DN 40 / NPS 1-1/2, Rp
- DN 50 / NPS 2, Rp
- DN 50 / NPS 2, CL150 FF
- DN 50 / NPS 2, PN 10/16

### Slam-Shut Trip Pressure Setting

(Select One if applicable)

- Overpressure (OPSO) trip only  
Indicate Overpressure Trip Point \_\_\_\_\_
- Over and Underpressure (OPSO/UPSO) trip  
Indicate Overpressure Trip Point \_\_\_\_\_  
Indicate Underpressure Trip Point \_\_\_\_\_

### Slam-Shut Options (Select One)

- Reed Switch
- Retrofit Switch Option (add magnet without reed switch)

# VS100 Series

## Ordering Guide (continued)

Regulators Quick Order Guide	
***	Readily Available for Shipment
**	Allow Additional Time for Shipment
*	Special Order, Constructed from Non-Stocked Parts. Consult Your local Sales Office for Availability.
Availability of the product being ordered is determined by the component with the longest shipping time for the requested construction.	

**Specification Worksheet**

**Application:**  
 Specific Use \_\_\_\_\_  
 Line Size \_\_\_\_\_  
 Gas Type and Specific Gravity \_\_\_\_\_  
 Gas Temperature \_\_\_\_\_  
 Does the Application Require Overpressure Protection?  
 Yes     No    If yes, which is preferred:  
 Relief Valve    Monitor Regulator    Shutoff Device  
 Is overpressure protection equipment selection assistance desired? \_\_\_\_\_

**Pressure:**  
 Maximum Inlet Pressure ( $P_{1max}$ ) \_\_\_\_\_  
 Minimum Inlet Pressure ( $P_{1min}$ ) \_\_\_\_\_  
 Downstream Pressure Setting(s) ( $P_2$ ) \_\_\_\_\_  
 Maximum Flow ( $Q_{max}$ ) \_\_\_\_\_

**Performance Required:**  
 Accuracy Requirements? \_\_\_\_\_  
 Need for Extremely Fast Response? \_\_\_\_\_

**Other Requirements:** \_\_\_\_\_

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