MEASUREMENT AND CONTROL

Регуляторы давления. Серия 1200. Описание.

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MEASUREMENT AND CONTROL

1200 Series Pressure Regulators

SOR® pressure regulators are durable, high performing instruments that are designed to provide reliable control of pressure in various stages of a flow system. From first cut, high pressure regulation applications to low pressure regulation and air filtration applications, SOR provides high quality instruments to control the process. All of the regulators in this catalog offer customizable spring ranges to enhance the control of their output pressure. NACE compliant options are also available for SOR pressure regulators.

1201-B
HIGH PRESSURE
REGULATOR

½" NPT
1267 AIR FILTER
REGULATOR

¼" NPT
1267 AIR FILTER
REGULATOR

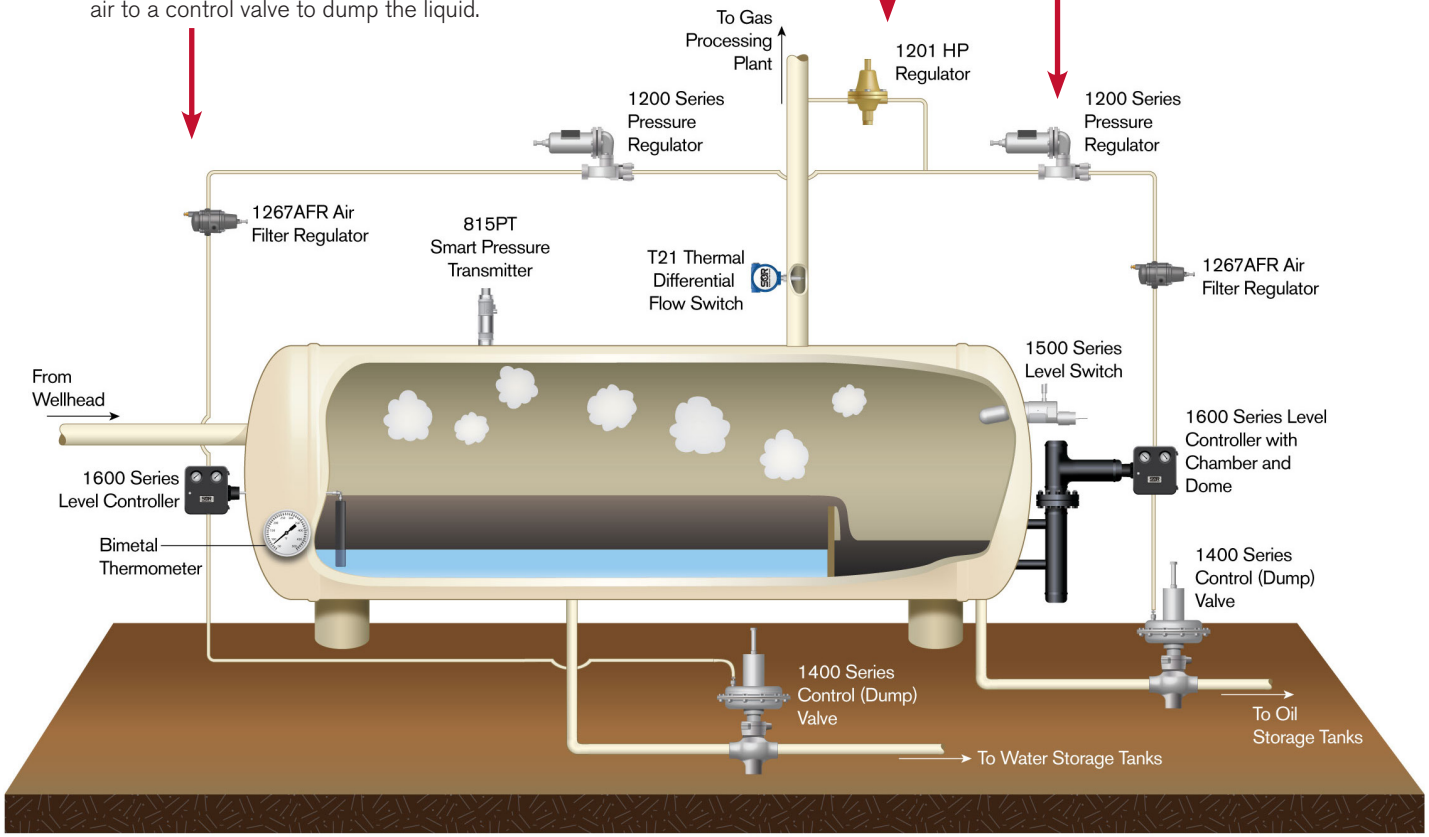
Applications

- Natural Gas instrumentation columns
- Control Valve Automation
- Pneumatic Controllers
- Pneumatic Tooling
- Catalytic Heaters
- Chemical Injection Pumps

In this case the 1201 HP Regulator is taking the high pressure natural gas coming off of the well by tapping into the main line going to the gas processing plant. This reduced pressure is then sent to the pneumatic equipment on the seperator. Compressed air can also be used.

A 1200 Series Pressure Regulator takes the still relatively high pressure gas from the 1201HP Regulator and reduces it once again to an even lower pressure (<250 psi) that the 1267 AFR can handle.

The 1267AFR is used to supply accurate, filtered, pneumatic pressure to a Liquid Level Controller. When the level set point is met, the level controller then sends the pneumatic air to a control valve to dump the liquid.



1200 Series Regulators

1201
High Pressure Regulator

The 1201 High Pressure Regulator is designed to provide pressure control in numerous processes that involve a high-pressure drop. It is an extremely durable regulator capable of handling a max inlet pressure of 5000 psi (345 bar). The spring configuration of the 1201 Regulator can be configured to provide five different outlet pressures ranging from 0-225 psi (0-15.5 bar).

Features

- 3 outlet ports able to send reduced pressure to 3 separate pneumatically controlled devices
- Tamper resistant adjustment screw or T-handle adjustment screw available

*Stainless steel version coming soon

Product Specifications

Inlet Size		¼" NPT
Outlet Number and Size		3 outlets, ¼" NPT
Spring Case Vent	Brass	4 holes, (5/32" each)
	SS	1/4" NPTF
Output Ranges		0 to 30 psi (0-2 bar) 0 to 60 psi (0-4 bar) 0 to 120 psi (0-8 bar) 0 to 150 psi (0-10 bar) 0 to 225 psi (0-15 bar)
Max Supply Pressure		5000 psig (345 bar)
Orifice and Flow Coefficient Value		5/64", Cv = 0.18*

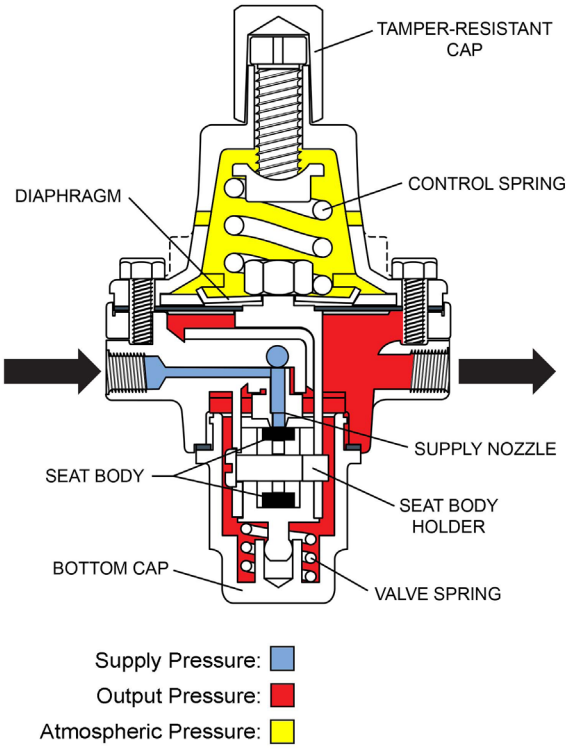
Temperature Range	-40°F to 225°F (-40°C to 107°C)	
Weight	3.25 lbs. (1.47 kg)	
Operating Media	Air, Inert Gas and Natural Gas	
Materials of Construction	**1201-B**	**1201-S**
Body, Bonnet, Bottom Plug	Brass	316SS
Tamper Resistant Cover	Brass	316SS
Diaphragm	302SS	Monel 400
Seals	Nitrile	PTFE
Valve Spring	17-7PH SS	MP35N
Range Spring	Spring Steel	
Seats	Nylon	PTFE

Design and specifications are subject to change without notice. For latest revision, see SORInc.com.

* Cv value is a theoretical value obtained from calculations using ISA-75 01.01-2007 standard. Please contact the factory for more information.

Principles of Operation

Directly operated, the 1201 Series Pressure Regulators register downstream pressure through the body, to the underside of the diaphragm. The disk is forced towards the orifice when downstream pressure is at or above the set pressure of the regulator, and less media flows through the regulator. When the downstream pressure decreases (as demand for the media increases), the regulator spring is able to extend, moving the disk assembly away from the orifice. Media is then allowed to flow through the regulator at a higher rate, until the downstream pressure once again reaches the set point. After the set point is reached, the downstream pressure pushes the disk assembly back towards the orifice, thus reducing flow through the regulator once more.



How to Order

Below is the SOR quick select model number tree that provides you with all the options to configure and order a product for your application. You must select a designator for each component.

Model 1		Material 2		Spring Range 3	
High Pressure Regulator	1201	Brass	B	030	0-30 psig (0-2 bar)
		(Coming Soon!) Stainless Steel	S	060	0-60 psig (0-4 bar)
				120	0-120 psig (0-8 bar)
				150	0-150 psig (0-10 bar)
				225	0-225 psig (0-15 bar

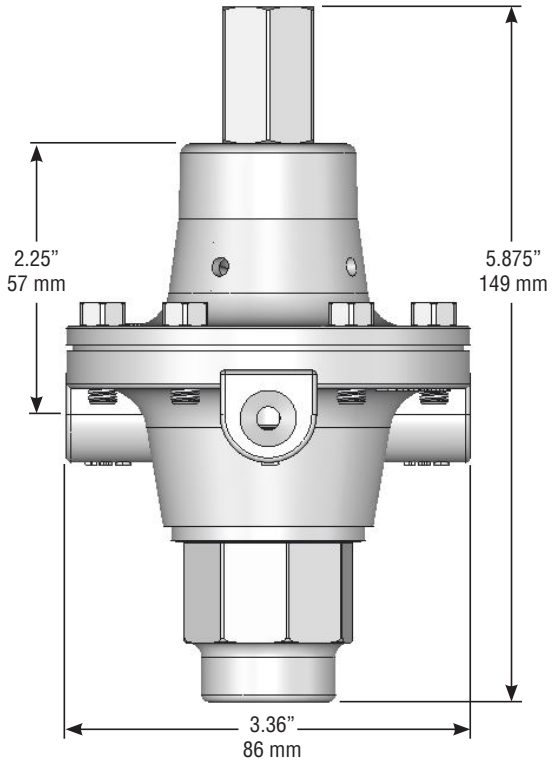
1201 - [ ] [ ]

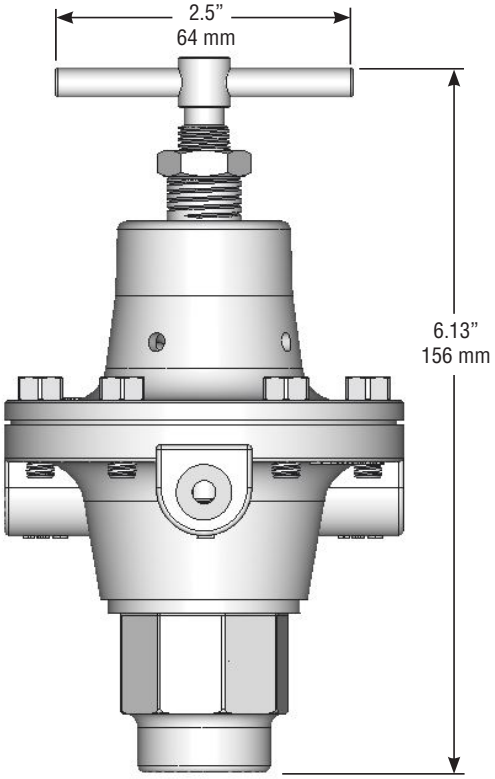
1201 - B 060 Example Model No.

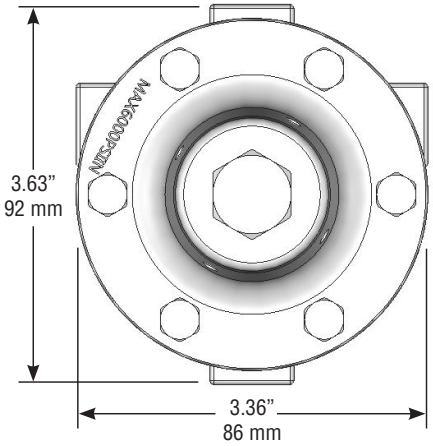
*For a T-handle bar adjustment method to replace the Allen Head, please order part number 1201-BHND for Brass or 1201-SHND for Stainless Steel.

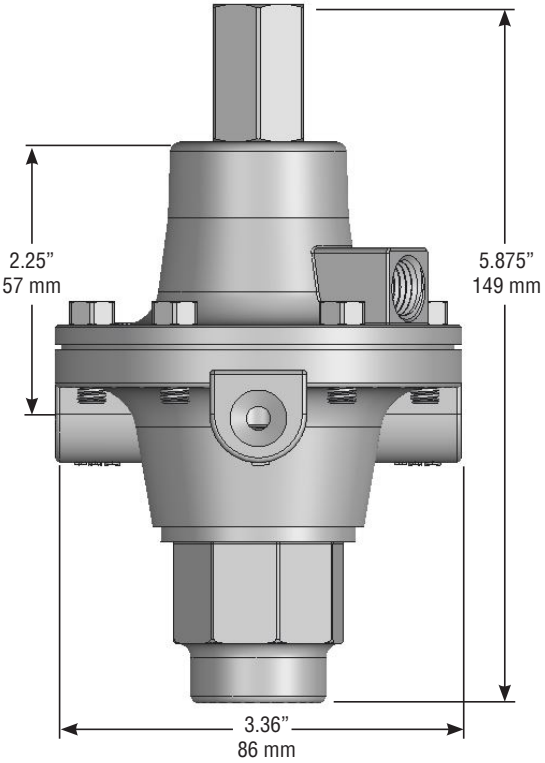
Dimensions

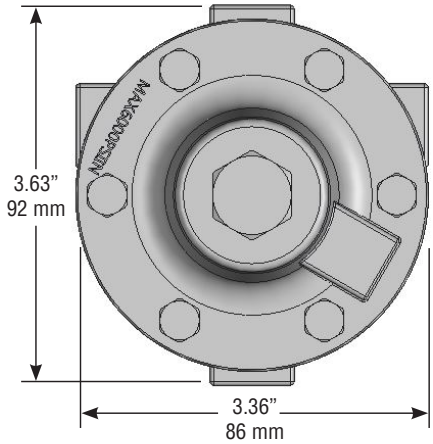
Dimensions shown are for reference only. Linear = mm/in.











1200 Series Regulators

1267 AFR
Air Filter Regulator

The 1267AFR Air Filter Regulator is designed to provide clean, accurate air pressure to instruments, valves, and other automatic control equipment in a lightweight, compact housing. These quality instruments are constructed of durable materials that will provide long lasting performance in industrial environments. The 1267AFR Air Filter Regulator is designed for use in systems that require clean, accurate instrument air. The 1267AFR provides pressure regulation and filtration in an integral compact package. Available in ¼" NPT porting for normal operation and ½" NPT porting for high flow capacity requirements.

¼" NPT

Features

- Compact and light weight construction
- Mounts where competitive units won't
- ¼" NPT version
- ½" NPT version for High flow capacity
- Low air consumption lower operating costs
- Tapped exhaust option
- Rugged, corrosion resistant design functional for harsh conditions
- Warranty - 18 months
- NACE option available for ¼" NPT version

HIGH FLOW CAPACITY ½" NPT

Product Specifications

In/Out Port Size	1/4" NPT 1/2" NPT (High flow capacity) (Gauge Ports 1/4 NPT)
Output Ranges	0-30 psi (0-2 bar) 0-60 psi (0-4 bar) 0-120 psi (0-8 bar)
Maximum Supply Pressure	250 psi (17 bar)
Mounting	Pipe or through body direct
Filter	40 micron (5 optional)
Cv Values	0.5 at 150 psi supply and 80 psi setpoint for 1/4" 2.5 at 150 psi supply and 80 psi setpoint for 1/2"
Exhaust Capacity	0.1 scfm (2.83 Nl/min) with downstream pressure 5 psi (0.3 bar) above set point
Sensitivity	1" of water
Air Consumption	Less than 5 scfh (2.5 Nl/min)

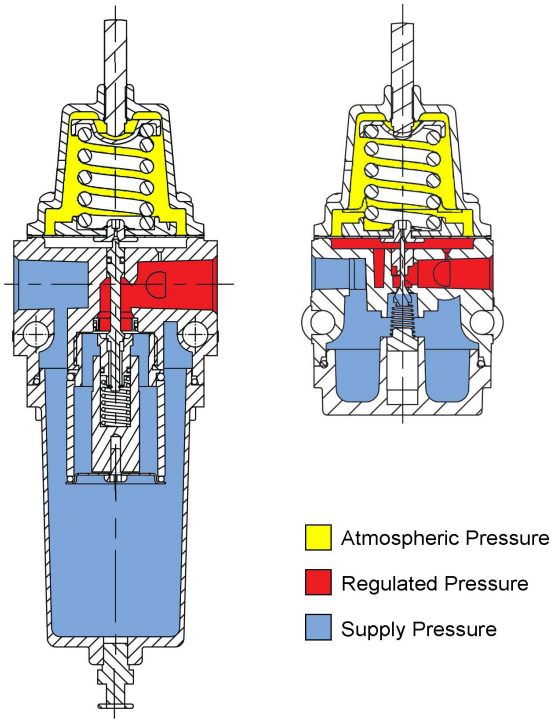
Effect of Supply Pressure Variation	Less than 0.25 psi (0.017 bar) for 25 psi (1.7 bar) change Less than 0.5 psi (0.035 bar) for 25 psi (1.7 bar) change
Temperature Limits	0° to 160° F (-18° C to 71° C)
Weight	1.2 lbs (.45 kg)
Operating Media	Air, Inert Gas and Sweet Natural Gas

Materials of Construction	Standard	NACE
Body	Diecast Aluminum Alloy, Irridite & Baked Epoxy Finish	
Filter	Polyethylene	Phenolic Impregnated Cellulose
Diaphragm	Nitrile Elastomer & Nylon Fabric	Viton
Valve Seat	Nitrile Elastomer	Viton
Additional Materials	Brass, Zinc Plated Steel, Acetal	316SS Aluminum, Heat Treated Plated Steel

Design and specifications are subject to change without notice. For latest revision, see SORInc.com.

Principles of Operation

Turning the adjusting screw changes the force exerted by the range spring on the diaphragm assembly. In equilibrium of set pressure, the force exerted by the range spring is balanced by the force from the output pressure acting underneath the diaphragm assembly. An unbalanced state between the output pressure and the set pressure causes a corresponding reaction in the diaphragm and supply valve assemblies.



If the output pressure rises above the set pressure, an upward force is exerted on the diaphragm assembly causing the relief seat to lift and open. Excess pressure is vented to atmosphere until equilibrium is reached. If the output pressure drops below the set pressure the unbalanced force of the range spring causes a downward force on the diaphragm assembly. The supply valve then opens until the pressure builds up once more to the equilibrium condition.

Under forward flow conditions, the range spring force is balanced by the diaphragm pressure force, with the supply valve open just enough to maintain the required equilibrium pressure. When high flow occurs, a specially designed aspirator helps maintain downstream pressure and compensates for droop.

How to Order

Below is the SOR quick select model number tree that provides you with all the options to configure and order a product for your application. You must select a designator for each component

1 Model
Air Filter Regulator: 1267

2 NPT
1 = ¼"
2 = ½" (High flow capacity)

3 Range
1 = 0-30 psi (0-2 bar)
2 = 0-60 psi (0-4 bar)
3 = 0-120 psi (0-8 bar)**

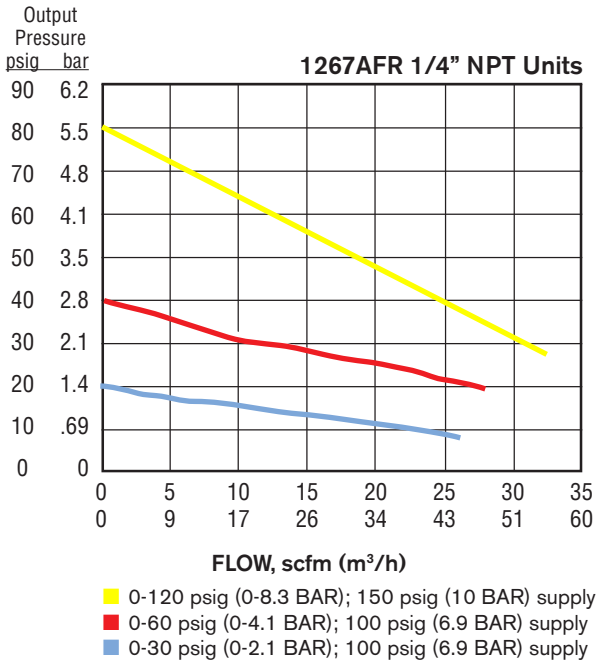
4 Options
E = Tapped Exhaust: Allows captured exhaust. ¼" NPT
F = 5 Micron Filter: Standard 40 micron filter is replaced with 5 micron filter for more complete air filtration
NC = Compliance to NACE Certification (includes Tapped Exhaust)***

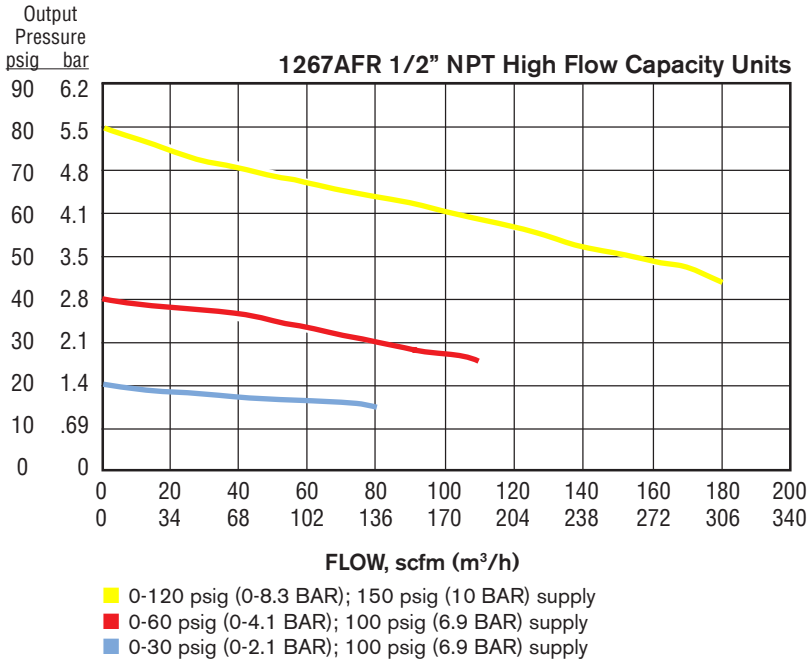
1267 - _ _ _

1267AFR - 1 2 E Example Model No.

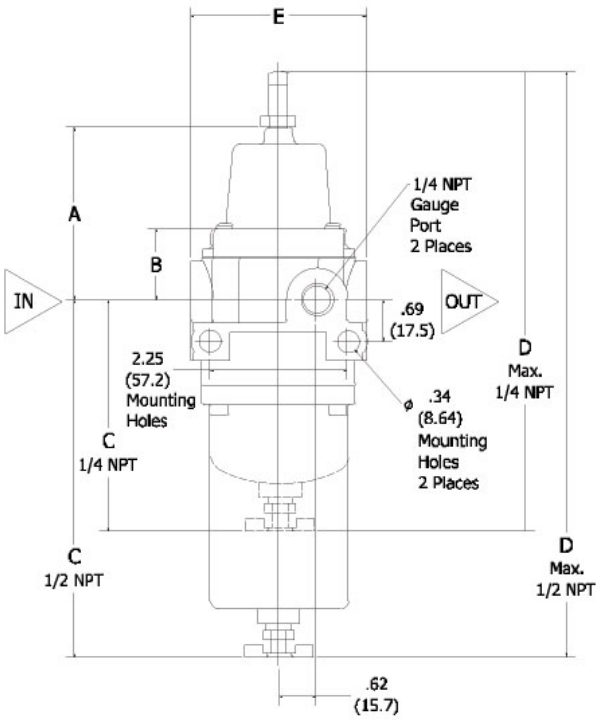
* Hand wheel to replace square head adjust screw is Part Number 1267AFR-KNOB
**When combined with NC option, Range 3 is 0-100 psi (0-6.9 bar)
*** Not available on ½" NPT version

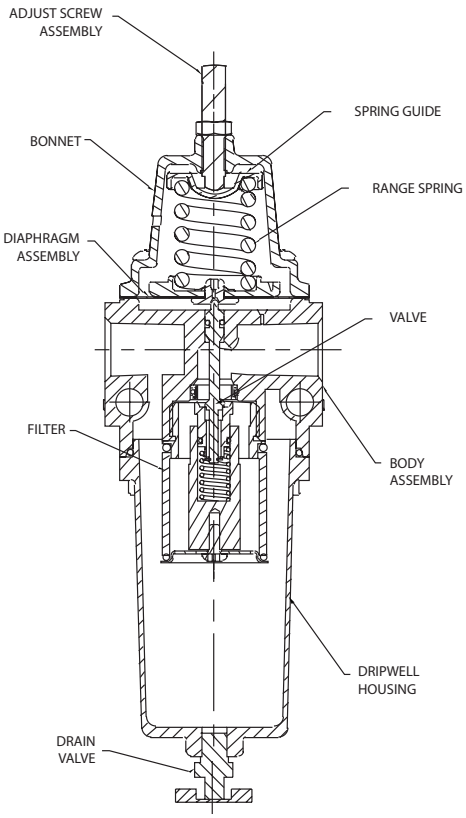
Flow Charts

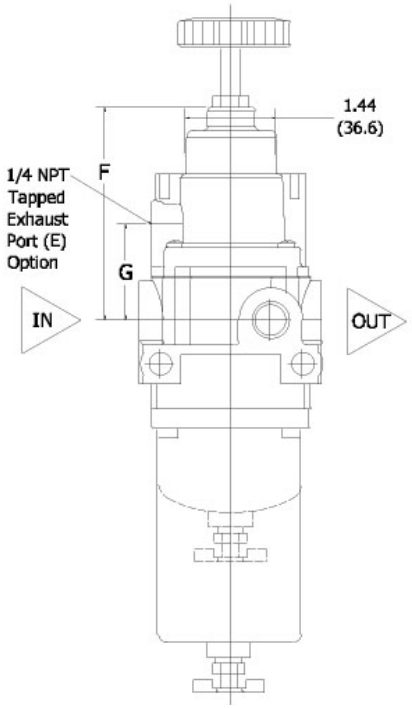

Output Pressure
psig bar
90 6.2
80 5.5
70 4.8
60 4.1
50 3.5
40 2.8
30 2.1
20 1.4
10 .69
0 0
1267AFR 1/4" NPT Units
0 5 10 15 20 25 30 35
0 9 17 26 34 43 51 60
FLOW, scfm (m³/h)
0-120 psig (0-8.3 BAR); 150 psig (10 BAR) supply
0-60 psig (0-4.1 BAR); 100 psig (6.9 BAR) supply
0-30 psig (0-2.1 BAR); 100 psig (6.9 BAR) supply

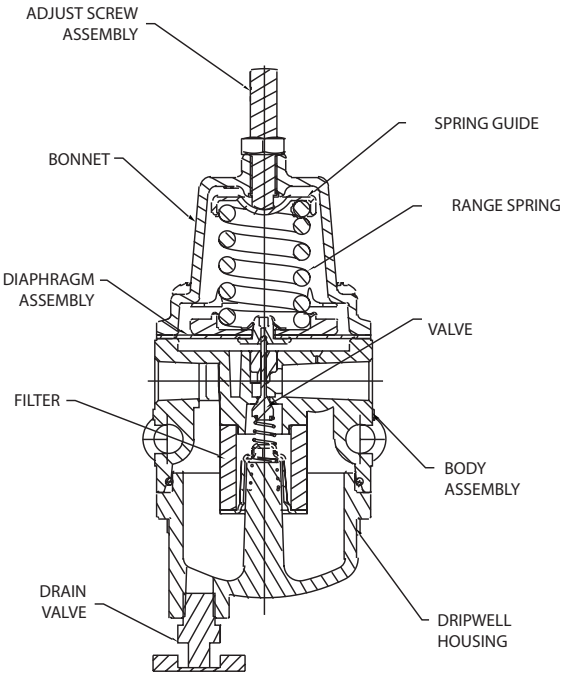

Output Pressure
psig bar
90 6.2
80 5.5
70 4.8
60 4.1
50 3.5
40 2.8
30 2.1
20 1.4
10 .69
0 0
1267AFR 1/2" NPT High Flow Capacity Units
0 20 40 60 80 100 120 140 160 180 200
0 34 68 102 136 170 204 238 272 306 340
FLOW, scfm (m³/h)
0-120 psig (0-8.3 BAR); 150 psig (10 BAR) supply
0-60 psig (0-4.1 BAR); 100 psig (6.9 BAR) supply
0-30 psig (0-2.1 BAR); 100 psig (6.9 BAR) supply

Dimensions shown are for reference only. Linear = mm/in.









Port Size (NPT)	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)
1/4”	2.66 (67.6)	1.0 (25.4)	3.42 (86.8)	7.15 (181.6)	2.25 (57.2)	3.19 (81.0)	1.22 (31.0)
1/2”	2.83 (71.9)	1.17 (29.7	6.06 (153.7)	9.78 (248.4)	2.25 (57.2)	3.36 (85.3)	1.39 (35.3)

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