

Sensitive Diaphragm Regulators

RDSC Series

Introduction

RDSC Series Sensitive Diaphragm Regulators feature a single-stage pressure reduction design and a large-diameter diaphragm to enhance sensitivity to pressure fluctuations, making them ideal for low-flow, high-sensitivity applications.

Features

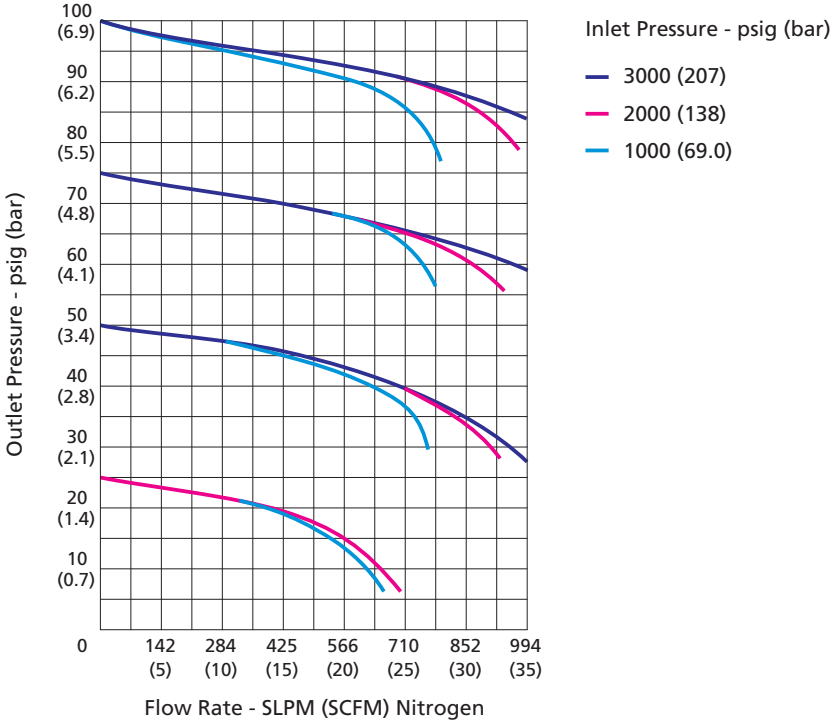
- ⦿ Lift poppet and diaphragm are made of Alloy C-276, offering excellent corrosion resistance
- ⦿ Metal-to-metal seal between valve body and diaphragm provides ensured sealing performance
- ⦿ Reinforced diaphragm design extends diaphragm service life
- ⦿ The bonnet includes a captured vent port, allowing media to be vented to a designated location in the event of an accidental diaphragm rupture

Technical Data

Port Size	1/4", 3/8", 6 mm or 8 mm		
Max. Working Pressure	4500 psig (310 bar)		
Outlet Pressure Range	0 ~ 25 psig (0 ~ 1.7 bar)		
	0 ~ 50 psig (0 ~ 3.4 bar)		
	0 ~ 100 psig (0 ~ 6.9 bar)		
	0 ~ 150 psig (0 ~ 10.3 bar)		
	0 ~ 200 psig (0 ~ 13.8 bar)		
Flow Coefficient (Cv)	0.06		
Working Temperature	-40 ~ 165 °F (-40 ~ 74 °C)		
SPE (Supply Pressure Effect)	0.5 psig per 100 psig source pressure change		
Leak Rate (Helium)	External	Inboard	$\leq 2 \times 10^{-10}$ std cm ³ /s
		Outboard	$\leq 1 \times 10^{-9}$ std cm ³ /s
	Internal	$\leq 4 \times 10^{-8}$ std cm ³ /s	

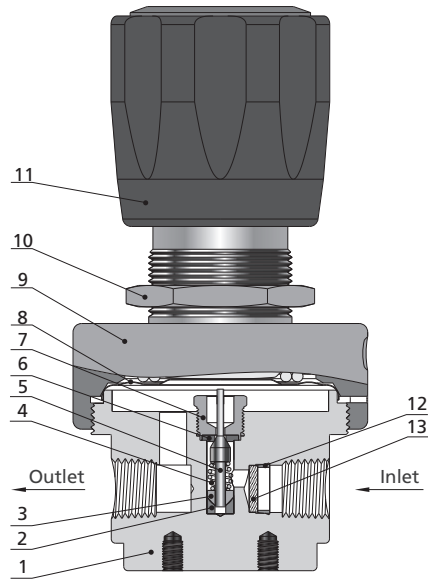


Flow Data



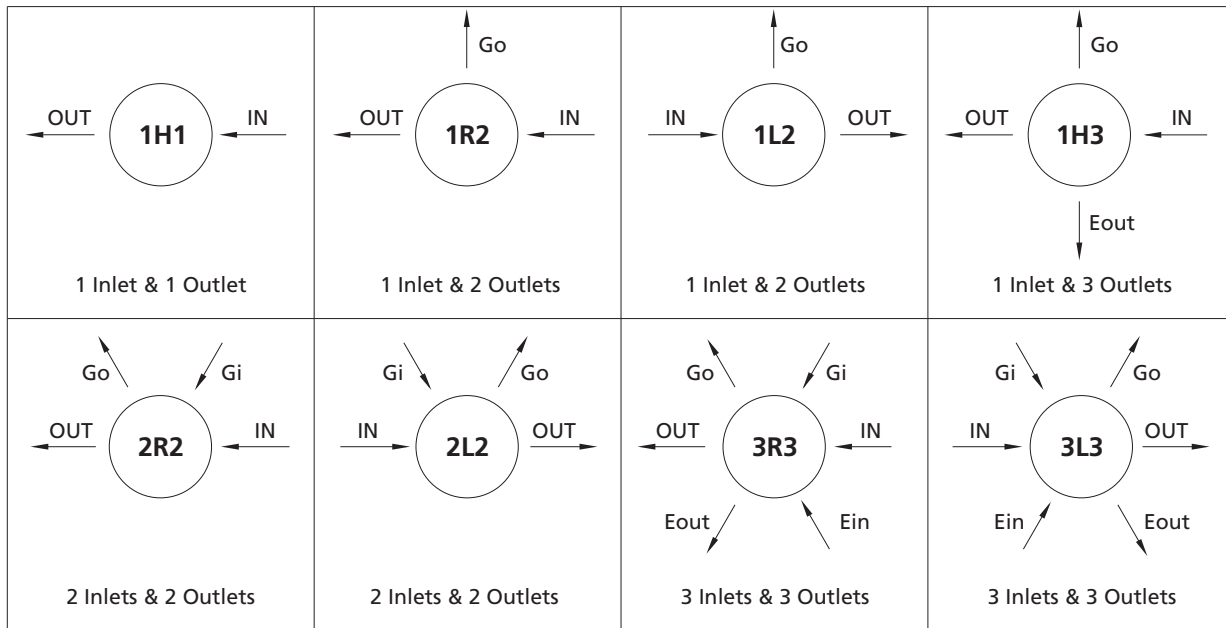
Item	Process Specification	Special Cleaning and Packaging Process (FC-02)
Material		316L SS, 316L SS VAR, Brass
Wetted Surface Roughness		Ra 32 μin. (0.8 μm)
Polishing Process		Machine finished
Assembly Environment		In specially cleaned areas
Packaging		Double bagged

Major Materials of Construction



Item	Component	Material/Specification
1	Body	316L SS or 316L SS VAR or Brass
2	Friction Sleeve	316L SS or 316L SS VAR
3	Poppet Damper	PTFE/ASTM D1710
4	Poppet Spring	Alloy X-750
5	Lift Poppet	Alloy C-276/ASTM B574
6	Seat	PCTFE/ASTM D1430 or PTFE/ASTM D1710
7	Seat Retainer	316L SS or 316L SS VAR
8	Diaphragm	316L SS/ASTM A240
9	Bonnet	304 SS/ASTM A479 or Brass
10	Panel Nut	304 SS/ASTM A479
11	Handle	ABS
12	Retaining Ring	PTFE/ASTM D1710
13	Filter	316L SS

Porting Configurations



Porting Configuration Symbol

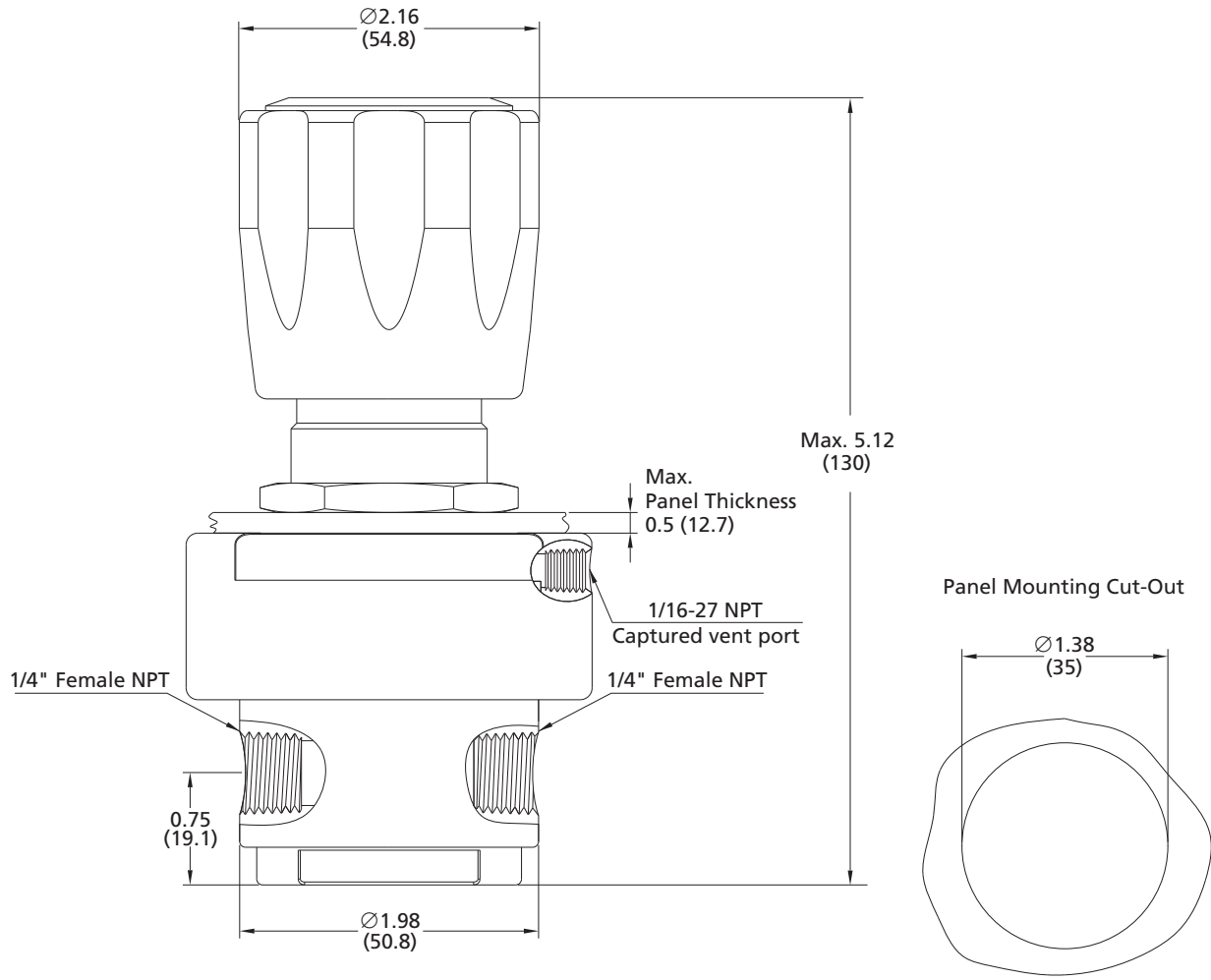
IN	OUT	Gi	Go	Ein	Eout
Inlet	Outlet	Inlet Pressure Gauge Port	Outlet Pressure Gauge Port	Auxiliary Inlet	Auxiliary Outlet

Notes:

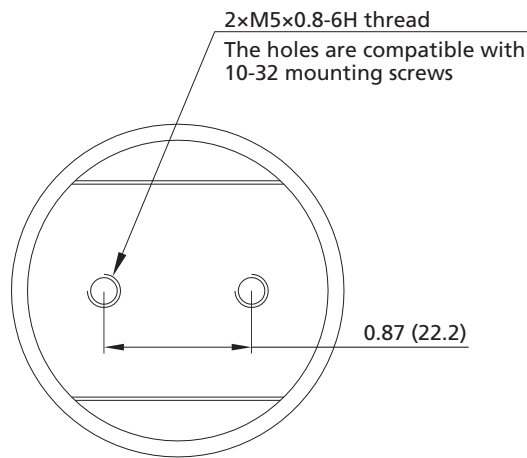
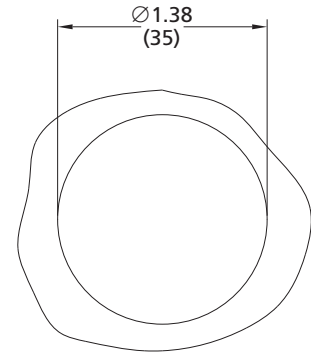
1. IN and OUT are the inlet and outlet ports for connecting the valve to the system. Ports other than IN and OUT should not be used for system connections.
2. Porting configuration is viewed from the top.

Dimensions

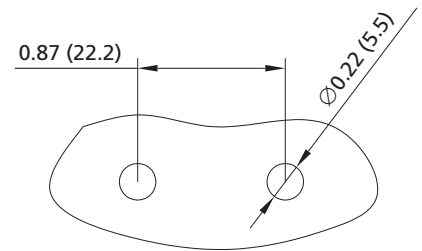
Dimensions, in inches (millimeters), are for reference only.



Panel Mounting Cut-Out

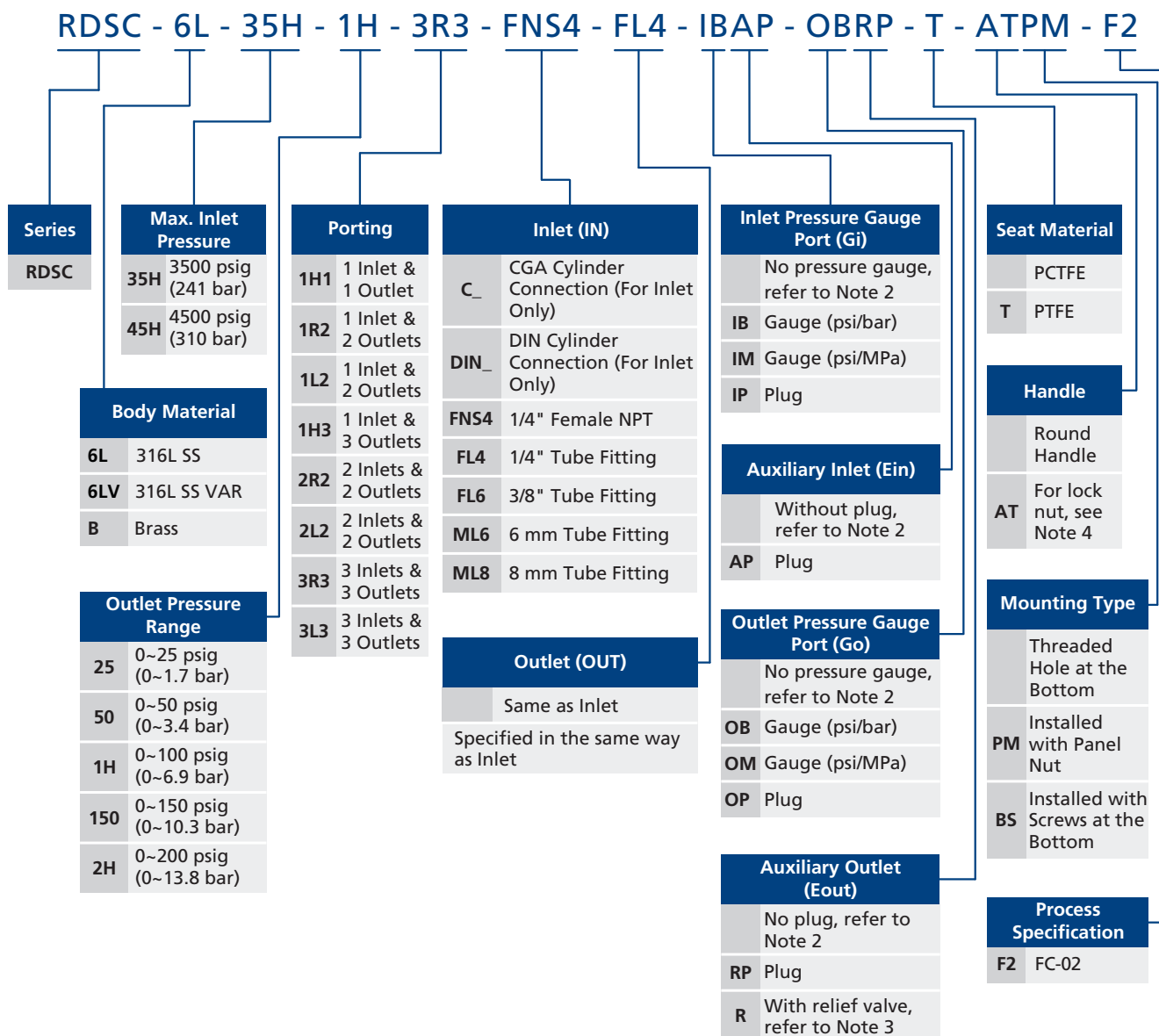


Bottom Mounting Screw Holes



Bottom Mounting Cut-Outs

Ordering Number Description



Notes:

- "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
- The body connection is 1/4" Female NPT by default. Other options are adapted from Male NPT.
- For the outlet relief valve, the set pressure is factory-set to 1.05-1.1 times the maximum outlet pressure by default.
- Lock nut (AT): The metal lock nut construction is designed to prevent accidental pressure adjustments. FITOK can set the specified outlet pressure based on customer requirements; simply include this information in the remarks when placing an order. If the outlet pressure is not specified, customers will need to adjust and fix it themselves.