

## Series 598 FO Back-Pressure Regulators



### General Description

The 598 FO Series pressure relief valves or back-pressure regulators are designed to work successfully in a wide variety of gas applications.

Its excellent design and easy in-line maintenance makes it the proper regulator for any application where reliable performance and fast repair are required.

Many years of experience in designing and installing gas pressure regulators have been condensed in each single part of this family of valves.

Great sensitivity and high stability. Changes in upstream pressure act quickly on the main diaphragm to provide fast response to system changes.

The addition of an internal inlet strainer prevents large particles from entering the regulator, minimizing damage to internal parts.

They are all diaphragm-style valves, soft seated suitable for dry, clean gas applications. They are designed to be used in high and medium pressure gas applications.

The SERIES 598 FO back-pressure regulators provide smooth operation, tight shut off, low noise and long operating life with ease of maintenance.

### Specifications

Connections	Flanged or Threaded
Body Sizes	1" (DN 25) or 2" (DN 50)
Capacity (Cg)	1": 550 / 2": 1300
End Connections and Pressure Ratings	Flanges: ANSI 300# RF 51.0 barg (740 psig), ANSI 150# RF 20.3 barg (294 psig) Thread: Female NPT 51.0 barg (740 psig) or 20.3 barg (294 psig)
Reference Standards	EN 334, ANSI B16.5, ANSI B 1.20.1
Fail Position	FO (Fail Open)
Shutoff Classification	Class VI according to FCI-70-2
Operating Temperature	-20°C to 60°C (-10°F to 140°F)

### E68 Pilots

598 FO SERIES back-pressure regulators are operated through the E67NC FAMILY pilots. This family of pilots is state of the art equipment suitable for every operating configuration including remote set point modifications. Their rugged design, proven reliability and accurate regulation offers versatility for a wide variety of applications.

### E112 Restrictor

598 FO SERIES back-pressure regulators are used in conjunction with type E112 restrictor through which it is controlled the regulator's proportional band (droop) and speed of response.

### Silencer

598 FO SERIES back-pressure regulators may be optionally equipped with a multi path silencer to cope with the most stringent requirements of noise control. These silencers may be installed also for controlling maximum flow rates in case of installations where a larger pressure regulator is installed for future requirements while actual consumption is only a fraction of the allowable capacity. Standard silenced trims include 90%, 70%, 50% and 30% full valve capacity. Silencer may be installed and removed at any time without taking the valve from the line.

### Accessories

Several accessories are available for the SERIES 598 FO back-pressure regulators. Some of them are standard supplied in specific applications others are required by some gas plant configurations.

### Construction Materials

Part	Material
Body	ASTM A216 WCB Class ANSI 150 also available in ASTM A536 Gr. 65-45-12
Body Cap	ASTM A216 WCB Class ANSI 150 also available in ASTM A536 Gr. 65-45-12
Body Nozzle	ASTM A216 WCB Class ANSI 150 also available in ASTM A536 Gr. 65-45-12
Main Diaphragm	Nitrile (NBR) with fabric
Slotted Cage (Plate)	Stainless Steel
Seals	Nitrile (NBR) or Flourelastomer (FKM)

### Sizing Formula

**Critical Condition  $P_1 \geq 2P_2$**

$$C_g = \frac{Q}{6,97 \cdot P_1} \sqrt{d \cdot (273,15 + t)}$$

**Subcritical Condition  $P_1 < 2P_2$**

$$C_g = \frac{Q}{13,94} \sqrt{\frac{d \cdot (273,15 + t)}{P_2 (P_1 - P_2)}}$$

#### References:

Q: Flow measured in Sm<sup>3</sup>/h

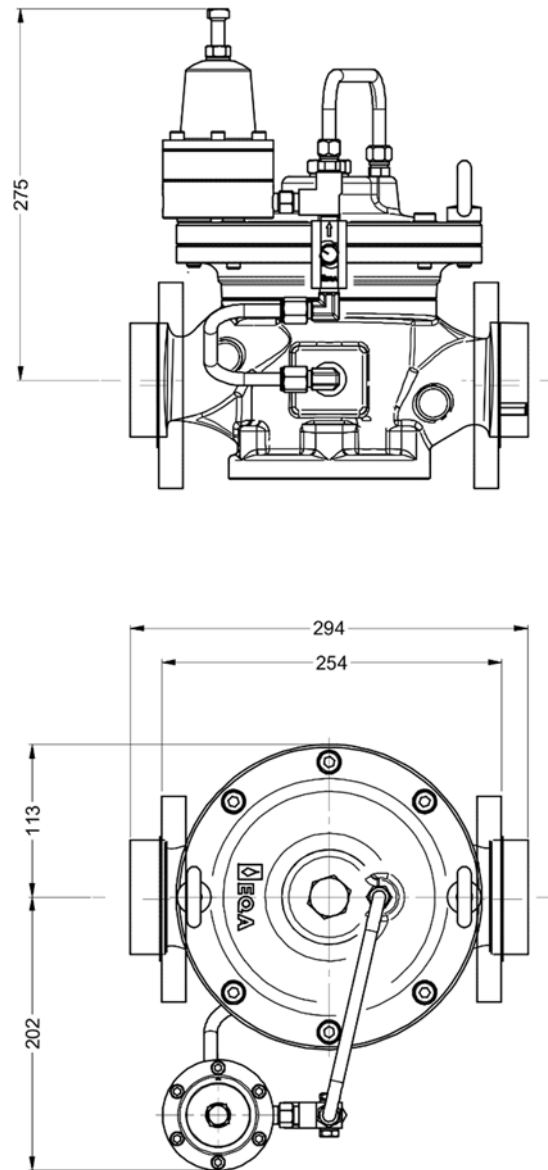
P1: Absolute Inlet Pressure

P2: Absolute Outlet Pressure

d: Specific Gravity

t: Temperature measured in °C

## General Dimensions



## Spare Parts

It is advisable to inform serial number of regulator when spare parts are required. It is recommended to carry out preventive maintenance on a regular basis.

## Ordering Information

For a successfully performance of regulator it is advisable to provide to your Sales Representative with complete service conditions information (fluid, temperature, set point, downstream pressure and flow rate) when ordering the product.