HELYON

HELYON - 5 Chemin du Jubin 69570 DARDILLY
Tél. +33 (0)4 72 52 16 70 - Fax +33 (0)4 72 52 16 71
www.helyon.com / E-mail : contact@helyon.com

# SELF-OPERATED PRESSURE REGULATORS

# EXCESS PRESSURE VALVE MODEL S2

## MAIN CHARACTERISTICS

S2 model is a self-operated fully balanced excess pressure relief valve. It's used to maintain the pressure upstream of the valve to an adjusted set point.

When upstream pressure rises above a set point, the valve opens proportionally pressure rising.

This model of regulator is suitable for steam, compressed air, no hazardous gases and liquids.

The actuator has a diaphragm with a reinforced lining.

Condensation tank is available and necessary for steam or fluids which temperature is higher than 125ºC, in order to protect the diaphragm against overheating.

Regulation range between 0,05 and 8 barg with different actuators (up 20 barg under request).

Permissible temperature is **-10** up to **80**ºC (180ºC steam).

| | |
|---|---|
| **Max. Pressure** | PN40 |
| **Max. Inlet pressure** | 16 barg |
| **Sizes** | DN15 to DN50 |
| **Body material** | Nodular Iron ( GGG40.3 )<br>Carbon steel ( GSC25N )<br>Stainless steel ( 1.4408 ) |
| **Connections** | Flanged DIN PN16-PN40<br>Flanged ANSI 150 / 300<br>Threaded BSP / NPT, consult |
| **Trim material** | Stainless steel Aisi 316L |
| **Diaphragm Material** | EPDM -40ºC to 125ºC<br>EPDM + PTFE 125ºC to 250ºC |
| **Seal material** | Soft seal NBR for liquids<br>Graphited PTFE for air and steam |

### Applications

Allows an excess pressure area to feed another lower pressure. Chemical laboratory installations, waters distribution systems, installation of waste water, industrial, compressed air, sprinkler systems, fuel-oil,…

Figure 1

### Another configurations

Steam installation up to 180ºC, special gasket materials, Stainless steel actuators, Stainless steel AISI 316 trim, lapped seal, internal compensation control line,…

HELYON - 5 Chemin du Jubin 69570 DARDILLY
Tél. +33 (0)4 72 52 16 70 - Fax +33 (0)4 72 52 16 71
www.helyon.com / E-mail : contact@helyon.com

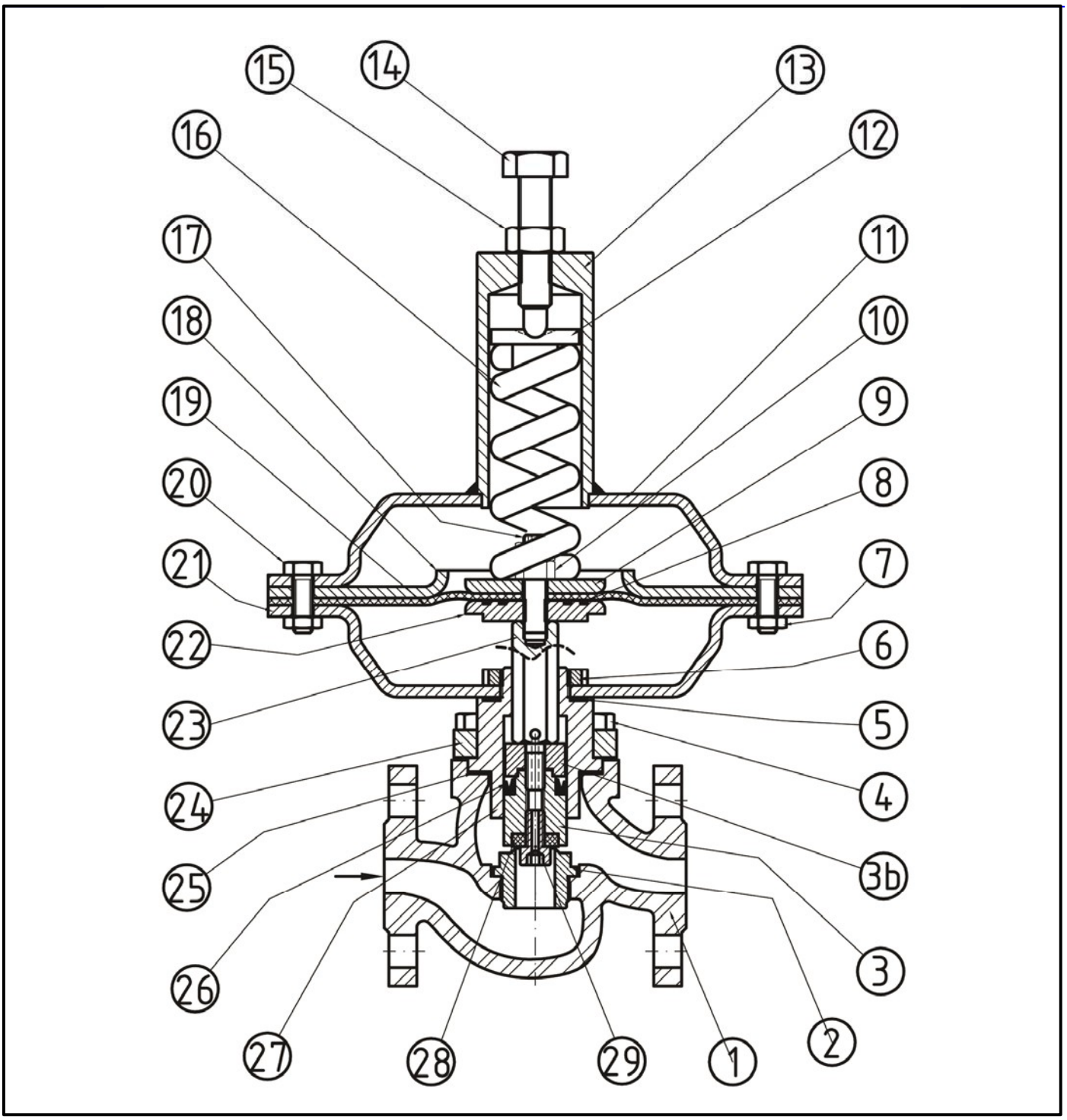


Figure 2

## PRINCIPLE OF OPERATION

The excess pressure valves S2 model works with direct action principle.

The forces at the plug caused by the upstream and downstream pressures are eliminated by the balancing gasket. The plug is fully balanced.

When the force resulting from the upstream pressure $p_1$ (via external control line or via internal) exceeds the spring force adjusted at the set point springs, the valve opens proportionally to the change in pressure.

The spring force is adjustable at the set point bolt (item 14).

HELYON - 5 Chemin du Jubin 69570 DARDILLY
Tél. +33 (0)4 72 52 16 70 - Fax +33 (0)4 72 52 16 71
www.helyon.com / E-mail : contact@helyon.com

## MATERIALS

| Body Nodular | GGG40.3 | Carbon steel WCB | Stainless steel 1.4408 |
|---|---|---|---|
| Seat 1.4301 | (AISI304) | | |
| Obturator | NBR / 1.4301 / Graphited PFTE | | |
| Piston Gasket | NBR / Graphited PFTE | | |
| Trim | 1.4301 (AISI304) | | |
| Diaphragm | EPDM / EPDM+PTFE | | |
| Actuator | 1.0335 (optionally Stainless steel 1.4301) | | |
| Spring 1.4301 | | | |

## Dimensions, weight and Kv value

| **DN 15** | | **20** | **25** | **32** | **40** | **50** |
|---|---|---|---|---|---|---|
| **Valor Kv** | **3,8** | **5,1** | **9,4** | **15,4** | **22,2** | **32** |
| A 130 | | 150 | 160 | 180 | 200 | 230 |
| B 18 | | 18 | 18 | 18 | 18 | 18 |
| H 315 | | 315 | 325 | 325 | 360 | 360 |
| Aprox. weight | | | | | | |

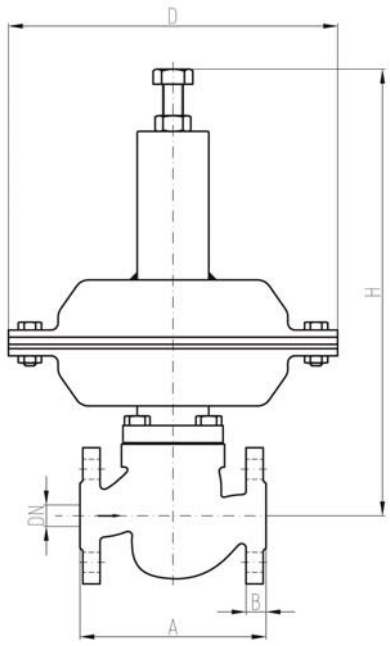


Figure 3 - Dimensions

## Downstream pressure ranges (D)

| **DN** | **15** | **20** | **25** | **32** | **40** | **50** |
|---|---|---|---|---|---|---|
| 20 - 40 mbar | D390 - 750 $cm^2$ - | | | | | |
| 30 - 100 mbar | D295 - 420 $cm^2$ | | | D390 - 750 $cm^2$ | | |
| 80 – 300 mbar | D295 - 360 $cm^2$ | | | | | |
| 0,2 – 1,2 bar | D230 - 240 $cm^2$ | | | | | |
| 0,8 – 3 bar | D195 - 120 $cm^2$ | | | | | |
| 2 – 8 bar | D175 - 80 $cm^2$ | | | | | |

HELYON - 5 Chemin du Jubin 69570 DARDILLY
Tél. +33 (0)4 72 52 16 70 - Fax +33 (0)4 72 52 16 71
www.helyon.com / E-mail : contact@helyon.com

THIS SHOULD NEVER BE USED AS SAFETY VALVE, ONLY LIKE ACCESSORY OF PRESSURE.

## INSTALLATION

Typical installation

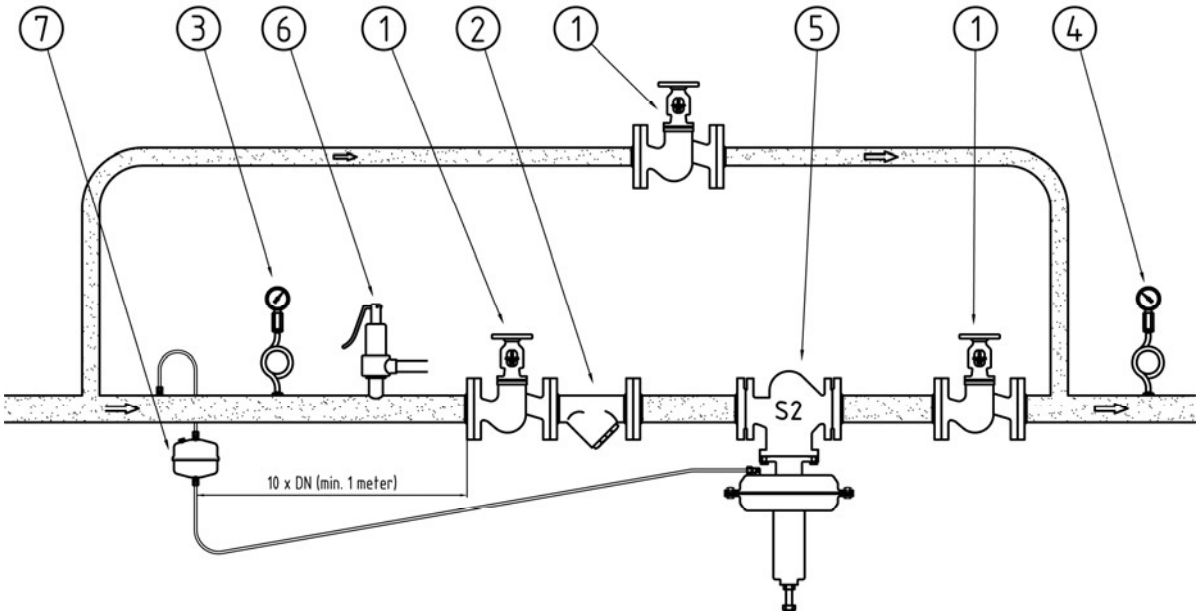


Figure 4

1.-Isolation Valve
2.-Filter
3.-Inlet pressure gauge
4.-Outlet pressure gauge
5.-Excess pressure Valve S2
6.-Safety Valve
7.-Condensing tank

It is advisable to mount in horizontal pipes, with the actuator at the top, as shown in figure 4.

It is essential to install a filter (item 2) at the entrance of the valve to avoid excessive maintenance venting line.

The distance between valve and pressure tapping point should be about 1 meter.