



**Aperval 101**  
Pressure Regulators

## Pressure regulators

### Aperval 101

Aperval 101 is a pilot controlled regulator for low and medium pressure applications. Aperval 101 is a “fail-open” regulator.

It opens in case of:

- lack of pilot loop supply
- damage of main pilot diaphragm (pressure detector element)

This regulator is suitable for use within previously filtered, non-corrosive gases.

Its truly “top entry” design allows any maintenance operation without removing the body from the line.

**Top entry** construction

**for easy Maintenance**



**DESIGNED  
WITH YOUR  
NEEDS IN MIND**

- COMPACT DESIGN
- EASY MAINTENANCE
- TOP ENTRY
- LOW NOISE

- WIDE RANGEABILITY
- INTERNAL SENSING LINE  
(ONLY FOR PILOTS SERIES HP)
- INTERNAL CONNECTION FOR  
PILOT BLEED (ON REQUEST)

Pressure regulators

Aperval 101

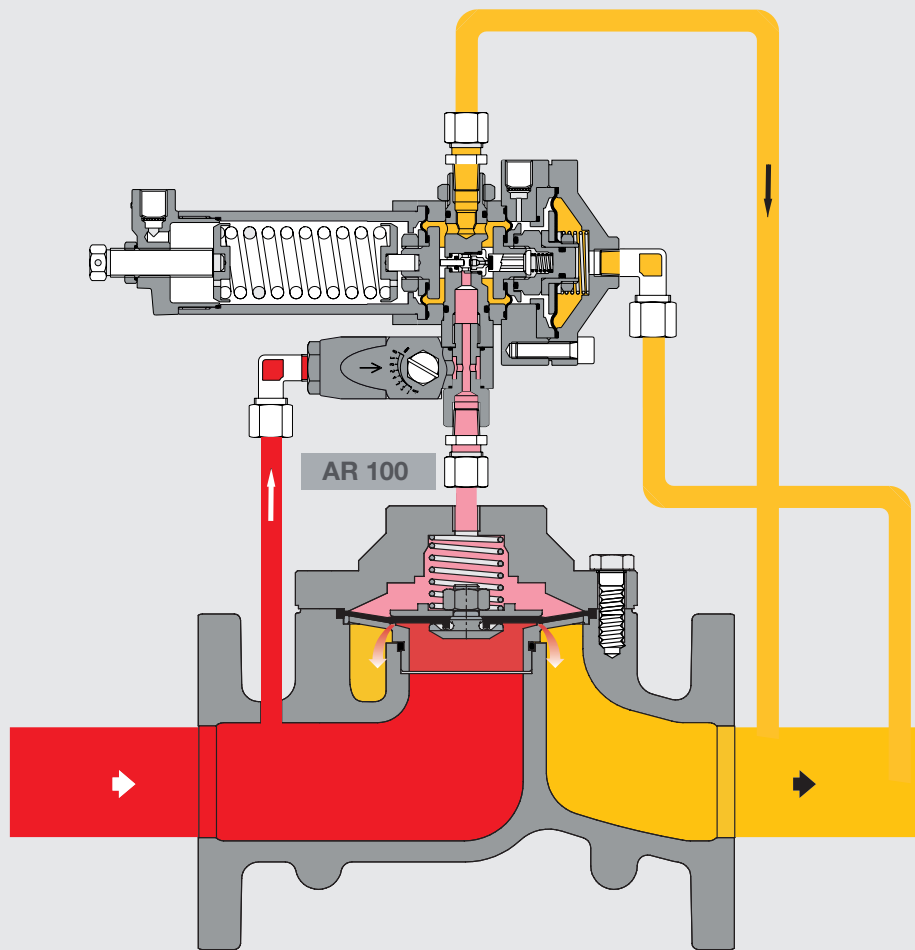


Fig. 1

## MAIN FEATURES

## Aperval 101

- > Design pressure: up to 17 bar (246,5 Psig) for spheroidal cast iron version  
up to 18,9 bar (274 Psig) for cast steel version
- > Operating temperature: -10 °C to +60 °C (14 °F to + 140 °F)
- > Ambient temperature: -20 °C to +60 °C (-4 °F to + 140 °F)
- > Range of inlet pressure bpu: 0,5 to 18,9 bar (7,25 to 274 Psig)
- > Range of outlet pressure Wd: 20 to 9500 mbar (0,29 to 137,75 Psig)
- > Minimum working differential pressure: 480 mbar (6,96 Psig)
- > Accuracy class AC: up to 5 (according to operating conditions)
- > Lock-up pressure class SG: from 10 to 30 depending on the outlet pressure
- > Available size DN: 2"- 3"- 4"
- > Flanging: class 125FF- 125RF- 150RF according to ASME B 16.1, and PN16 according to ISO 7005-2

## MATERIALS

## Aperval 101

<b>Body</b>	Spheroidal cast iron GS 400- 18 ISO 1083 Cast steel ASTM A216 WBC
<b>Head covers</b>	Rolled or forged carbon steel
<b>Diaphragm</b>	Vulcanized rubber
<b>Valve seat</b>	Tecnopolymer
<b>Seals</b>	Nitril rubber
<b>Compression fittings</b>	According to DIN 2353 in zinc-plated carbon steel

The characteristics listed above are referred to standard products. Special characteristics and materials for specific applications may be supplied upon request.

**Cg, Kg and K1 coefficient**
**Aperval 101**

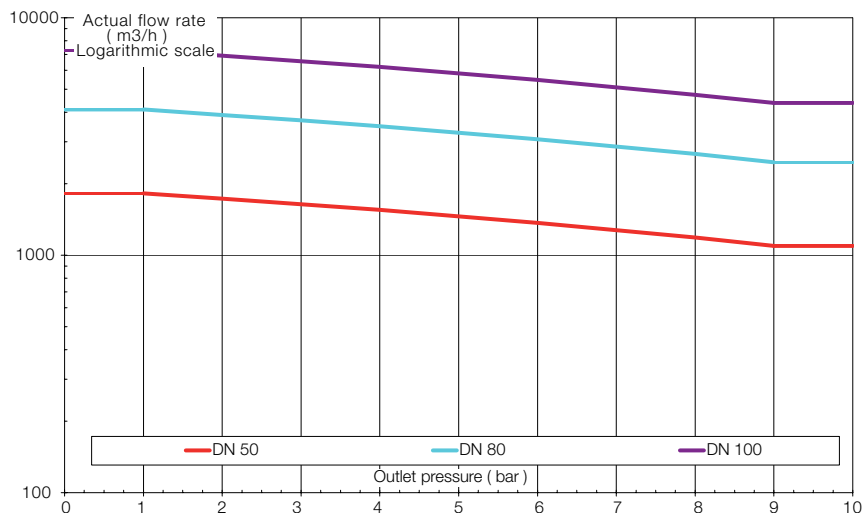
<b>Nominal diameter (mm)</b>	50	80	100
<b>Size (inches)</b>	2"	3"	4"
<b>Cg flow coefficient</b>	2091	4796	7176
<b>Kg flow coefficient</b>	2199	5045	7546
<b>K1 body shape factor</b>	108	108	108

For sizing formula refer to [www.fiorentini.com/sizing](http://www.fiorentini.com/sizing)

**Caution:**

The graph gives a quick reference of maximum recommended regulator capacity depending on selected size.

Values are expressed in actual m<sup>3</sup>/h of Natural gas (s.g. 0,6): to have the data directly in Nm<sup>3</sup>/h it is necessary to multiply the value by the outlet pressure value in bar – absolute.

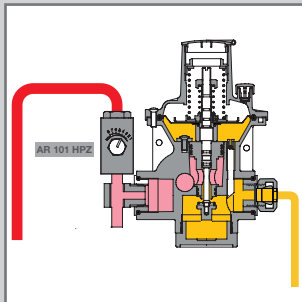


## PILOTS

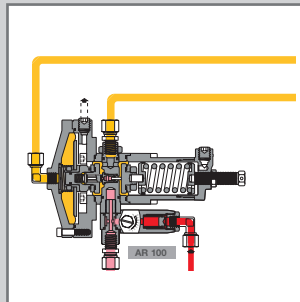
## Aperval 101

Aperval 101 regulators are equipped with series 300 and HP pilot listed below:

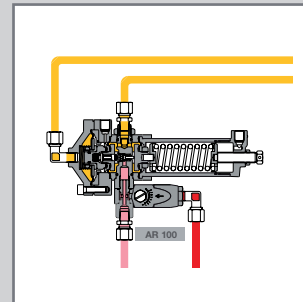
- HP 100AP + AR101HPZ control range Wh: 200 to 800 mbar (2,9 ÷ 11,6 Psig) on request
- HP 100APTR + AR101HPZ control range Wh: 800 ÷ 4500 mbar (11,6 ÷ 65,25 Psig) on request
- 301/A + AR100 control range Wh 20 to 100 mbar (0,29 ÷ 1,45 Psig)
- 301/A TR + AR100 control range Wh 100 to 2000 mbar (1,45 ÷ 29 Psig)
- 302/A + AR100 control range Wh 800 ÷ 9500 mbar (11,6 ÷ 137,75 Psig)



Pilot HP 100



Pilot 301/A



Pilot 302/A

## Pilot adjustments

## Aperval 101

<b>Pilot type .../A</b>	Manual setting
<b>Pilot type .../D</b>	Electric remote setting control
<b>Pilot type .../CS</b>	Pneumatic remote setting control

### Restrictor

The pilot loop is completed with a device called restrictor, external to the pilot.

The restrictor listed below are available:

- **AR 100 and AR 101HPZ:** variable restrictor to adjust regulator response time complete with integral filter at the inlet. Standard supply with all pilots of 300 and HP Series

## F.I.O.

## Aperval 101

On request Aperval 101 can be equipped with F.I.O.- Five In One - Smart unit for remote outlet pressure set point adjustment and remote monitoring of pressure reducing stations main parameters.

F.I.O. is the ideal solution for any need of outlet pressure profiling. The integrated communication system based on GSM / GPRS technology makes F.I.O the ideal and easy alternative to SCADA systems for remote operations of pressure reducing stations. Moreover, if SCADA system already exists, is possible to integrate F.I.O. via Modbus connection.

## OPTIONALS

## Aperval 101

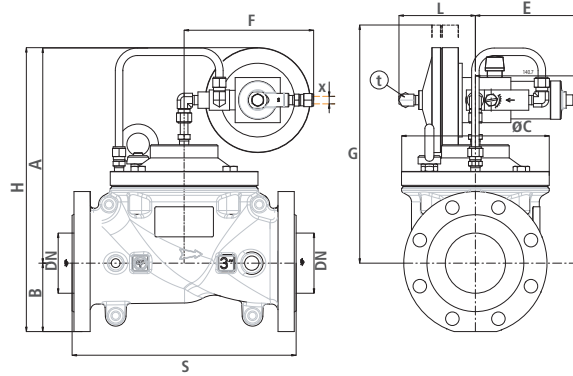
### For Regulator

- reduced cage
- flow-limiting devices
- steel fittings, single or dual sealing

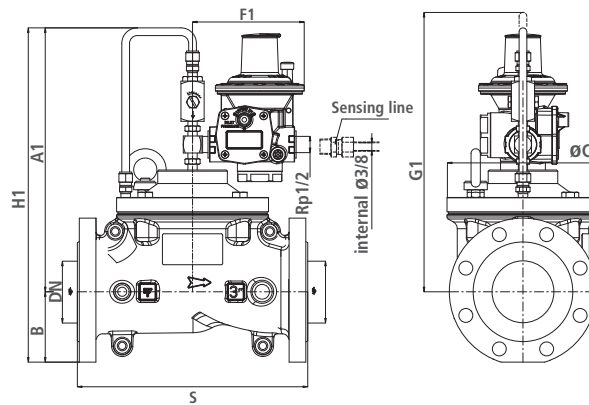
### For Pilot

- supplementary filter CF 14
- dehydrating filter CF 14/D

**Pilots 300 series**



**Pilots HP series**



**Overall dimensions in mm**

Size (mm)	50	80	100
Inches	2"	3"	4"
S	254	298	352
A	260	675	755
A1	305	380	410
B ANSI150	79	97	110
B PN16	79	97	105
ØC	162	197	290
E	165	165	165
F	170	170	170
F1	148	148	148
G	285	335	405
G1	330	385	450
H	341	386	455
H1	386	436	500
L	105	105	105

Face to face dimensions S according to IEC 534-3 and EN 334

**Weights in Kgf**

Size (mm)	50	80	100
Inches	2"	3"	4"
ANSI 125RF-150RF With Pilot HP	21	29	61
125FF-150FF With Pilot	22	30	62
PN 16 With Pilot HP	22	32	65
PN 16 With Pilot 301	23	33	66



Reducing stations



Metering



Ball valves



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The data are not binding. We reserve the right to make eventual changes without prior notice.

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[www.fiorentini.com](http://www.fiorentini.com)