



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

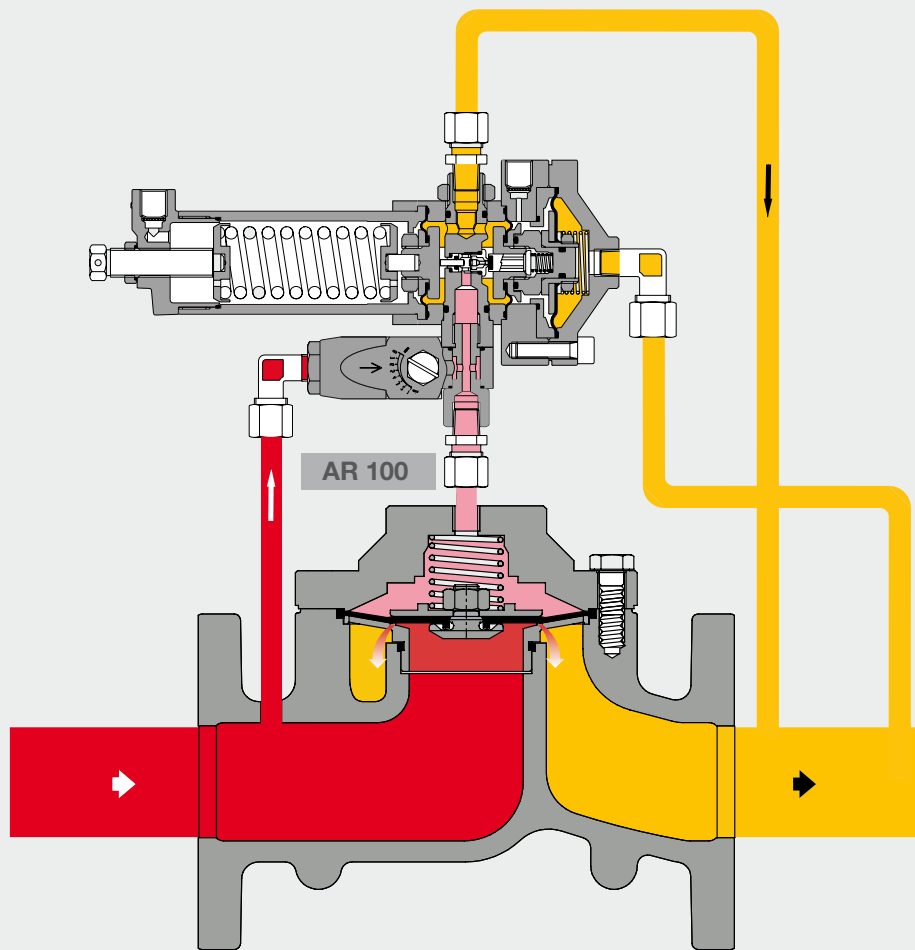


Fig. 1

MAIN FEATURES

Aperval 101

- > Design pressure: up to 246,5 PSIG (17 bar) for spheroidal cast iron version
up to 274 PSIG (18.9 bar) for cast steel version
- > Operating temperature: 14 °F to + 140 °F (-10 °C to +60 °C)
- > Ambient temperature: -4 °F to + 140 °F (-20 °C to +60 °C)
- > Range of inlet pressure bpu: 7.25 to 274 PSIG (0.5 to 18.9 bar)
- > Range of outlet pressure Wd: 0.29 to 137.75 PSIG (20 to 9500 mbar)
- > Minimum working differential pressure: 6.96 PSIG (480 mbar)
- > 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

Body	Spheroidal cast iron GS 400- 18 ISO 1083 Cast steel ASTM A216 WBC
Head covers	Rolled or forged carbon steel
Diaphragm	Vulcanized rubber
Valve seat	Tecnopolymer
Seals	Nitril rubber
Compression fittings	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, K_G and K₁ coefficient
Aperval 101

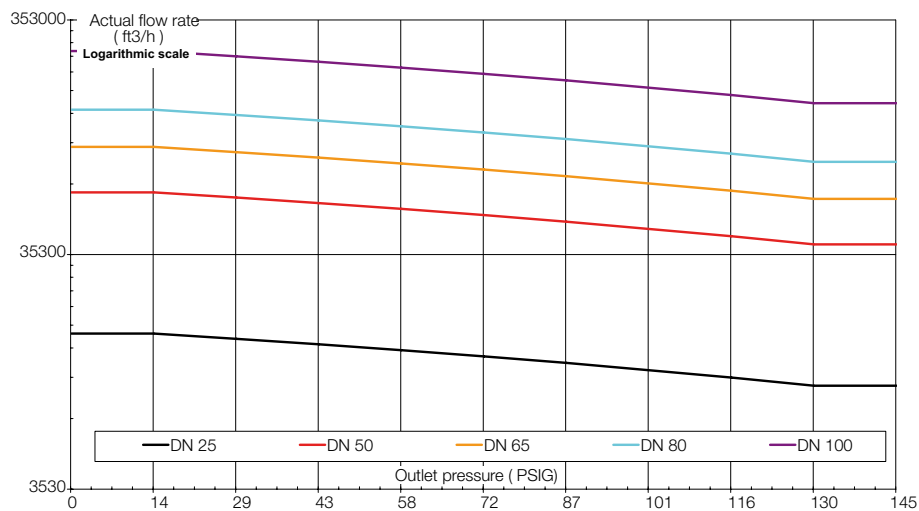
Nominal diameter (mm)	50	80	100
Size (inches)	2"	3"	4"
C_G flow coefficient	2091	4796	7176
K_G flow coefficient	2199	5045	7546
K₁ body shape factor	108	108	108

For sizing formula refer to 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 ft³/h of Natural gas (s.g. 0,6): to have the data directly in Nm³/h it is necessary to multiply the value by the outlet pressure value in bar – absolute.

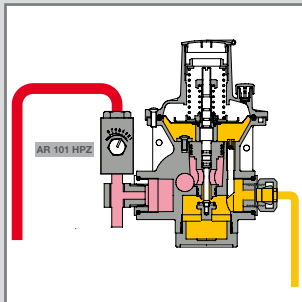


PILOTS

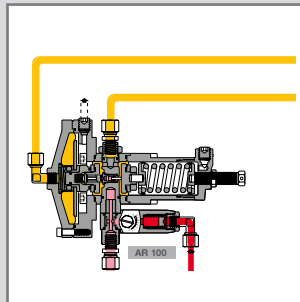
Aperval 101

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

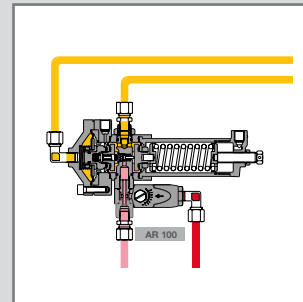
- HP 100AP + AR101HPZ control range Wh: 2.9 - 11.6 PSIG (200 to 800 mbar) on request
- HP 100APTR + AR101HPZ control range Wh: 11,6 - 65,25 PSIG (800 ÷ 4,500 mbar) on request
- 301/A + AR100 control range Wh: 0.29 - 1.45 PSIG (20 to 100 mbar)
- 301/A TR + AR100 control range Wh: 1.45 - 29 PSIG (100 to 2,000 mbar)
- 302/A + AR100 control range Wh: 11.6 - 137.75 PSIG (800 - 9,500 mbar)



Pilot HP 100



Pilot 301/A



Pilot 302/A

Pilot adjustments

Aperval 101

Pilot type .../A	Manual setting
Pilot type .../D	Electric remote setting control
Pilot type .../CS	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

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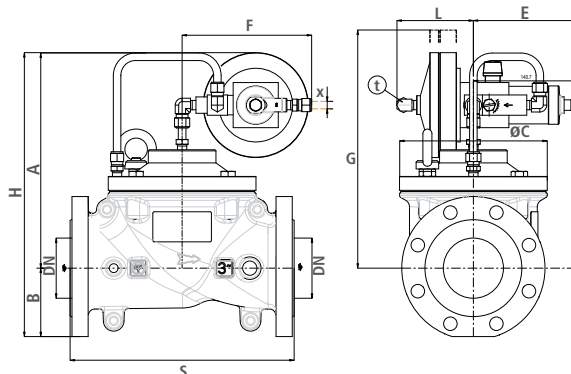
For Regulator

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

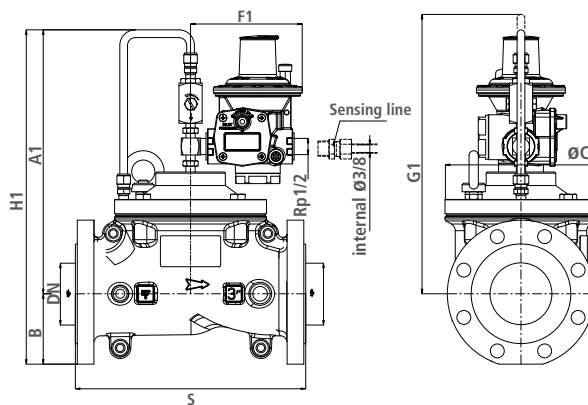
For Pilot

- 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	10	11.73	13.85
A	10.23	26.57	29.72
A1	12	14.96	16.14
B ANSI150	3.11	3.81	4.33
B PN16	3.11	3.81	4.13
ØC	6.37	7.75	11.41
E	6.49	6.49	6.49
F	6.69	6.69	6.69
F1	5.82	5.82	5.82
G	11.22	13.18	15.94
G1	12.99	15.15	17.71
H	13.42	15.19	17.91
H1	15.19	17.16	19.68
L	4.13	4.13	4.13

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

Weights in lbs

Size (mm)	50	80	100
Inches	2"	3"	4"
ANSI 125RF-150RF With Pilot HP	46.2	63.9	134.4
125FF-150FF With Pilot	48.5	66.1	136.6
PN 16 With Pilot HP	48.5	70.5	143.3
PN 16 With Pilot 301	50.7	72.7	145.5



Reducing stations



Metering



Ball valves



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