Pietro Fiorentini

Aperflux 851

Pressure Regulators

Aperflux 851

Aperflux 851 is pilot-controlled pressure regulator for medium and high pressure applications.
Aperflux 851 is normally a failed open regulator and specifically will open under the following conditions:
- breakage of main diaphragm;
- lack of feeding to the pilot loop.

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

Modular Design

The modular design of Aperflux 851 pressure regulators allows retrofitting of an emergency monitor PM/819, slam shut valve and or silencer on the same body.
The Aperflux 851 regulator is Truly a “top entry design” which allows ease of maintenance or retrofitting options in the field. The unique dynamic balancing system ensures an outstanding turn down ratio combined with an extreme accurate outlet pressure control.

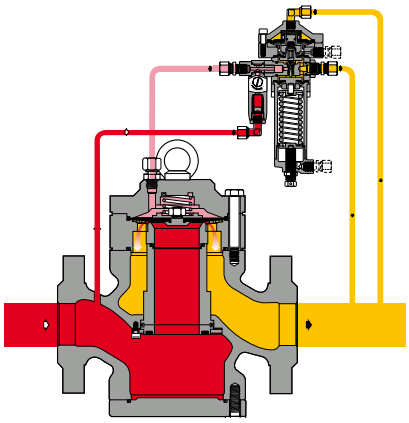


Fig. 1

Aperflux 851

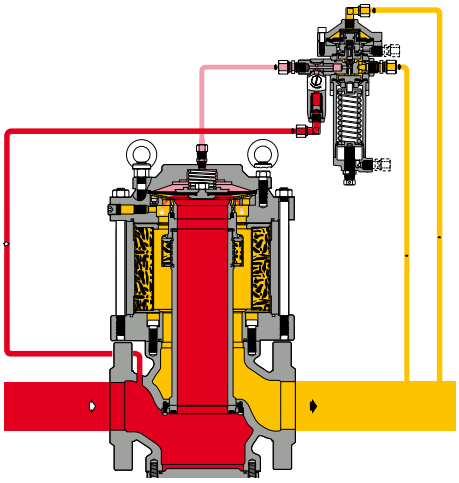


Fig. 2

Aperflux 851 + DB

Low Noise

Aperflux 851 is equipped, in standard configuration, with a double cage system. The first cage is specifically designed to optimize the opening / Cg ratio creating the base for the outstanding 500:1 rangeability peculiar for this regulator. The second cage is profiles to reduce noise emissions with the result that noise emission of standard Aperflux 851 regulator are lower of similar products equipped with an additional silencer.
For extra low noise installation the additional silencer DB is always available.

DESIGNED WITH YOUR NEEDS IN MIND

- COMPACT DESIGN
- EASY MAINTENANCE
- TOP ENTRY
- LOW NOISE
- OUTSTANDING TURN DOWN RATIO
- HIGH ACCURACY
- LOW OPERATION COST
- EXTREME FLEXIBILITY

SILENCER DB/851 — Aperflux 851

Whenever certain noise limit is desired, an additional silencer allows you to considerably reduce the noise level (dBA) up to the required value.
The Aperflux 851 pressure regulator can be supplied with an incorporated silencer in either the standard version or version with incorporated slam-shut or incorporated monitor regulator.
With the built-in silencer, the Cg and KG valve coefficients are 5% lower than the corresponding version without the silencer. Given the modular arrangement of the regulator, the silencer may be retrofited to both standard Aperflux 851 version as well as those with incorporated slam-shut or monitor, without any need to piping modification.
Pressure reduction and control operate the same manner as in standard version.

SLAM SHUT SB82 OR HB/97 — Aperflux 851

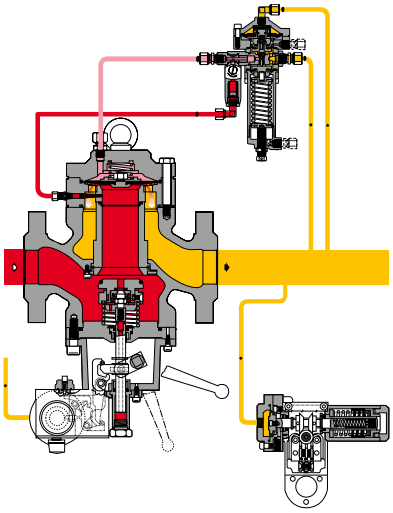


Fig. 3

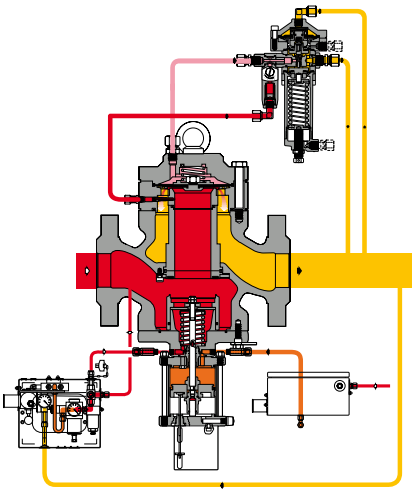


Fig. 4

The Aperflux 851 pressure regulator offers the possibility of installing an incorporated slam shut valve SB/82 or HB/97 valve, depending on the regulator size, and this can be done either during the manufacture process or be retrofited in the field. Retrofiting can be done without modifying the pressure regulator assembly.
The Cg and KG coefficients of a regulator plus incorporated slam-shut system are 5% lower than those for standard versions.
The main characteristics of this device are:
- intervention for over pressure and/or under pressure
- manual re-setting with internal by-pass activated by the lever mechanism;
- manual push button control;
- compact dimensions;
- easy maintenance;
- optional pneumatic or electromagnetic remote control;
- optional installation remote signal devices (contact switches or proximity switches).

MONITOR PM/819 Aperflux 851

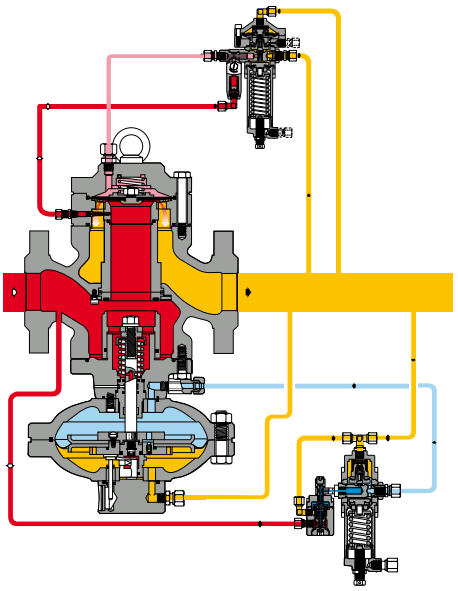


Fig. 5

This emergency regulator (monitor) is directly integrated to the body of the main regulator. Both pressure regulators, therefore, use the same valve body, although they have indipendent actuators, pilots and valve seats.
The operational characteristics of the PM/819 monitor are the same as for the Reflux 819 regulator (refer to specific catalogue).
The Cg and KG coefficients of regulator having an incorporated monitor are 5% lower than those for standard version. Another great advantage offered by the incorporated monitor regulator is that it can be installed at any time, even on analready existing regulator, without piping modification. This solution allows the construction of reduction lines with compact dimensions.

MAIN FEATURES Aperflux 851

> Design pressure: up to 102 bar (1450 Psig)
> Design temperature: -10°C to + 60°C (+14 to + 140 °F) (-20°C to + 60°C - 4 to + 140°F on request)
> Ambient temperature: -10°C to + 60°C (+14 to + 140°F) (-20°C to + 60°C - 4 to + 140°F on request)
> Range of inlet pressure bpe: 1,3 to 85 bar (18,8 to 1230 Psig)
> Range of outlet pressure Wh: 0,8 to 74 bar (12 to 1073 Psig) depending on installed pilot
> Minimum working differential pressure: 0,5 bar (7,25 Psig) - Recommended > 2 bar (30 Psig)
> Accuracy class AC: up to 1
> Closing pressure class SG: from 5 to 1,5 depending on outlet pressure
> Available size DN: 1” -2” -3” -4” -6” -8” -10”
> Flanging: class 150-300-600 RF or RTJ according to ANSI B16.5 and PN16 according to ISO 7005.

MATERIALS — Aperflux 851

Body	Cast steel ASTM A352 LCC for classes 300 and 600 ASTM A216 WCB for classes 150 and PN16
Head covers	Rolled or forged carbon steel
Diaphgram	Vulcanized rubber
Valve seat	Stainless steel for DN ≤3” Carbon Steel with seal edge in stainless steel for size ≥ 4”
Seals	Nitril rubber
Compression fittings	According to DIN 2353 in zinc-plated carbon steel

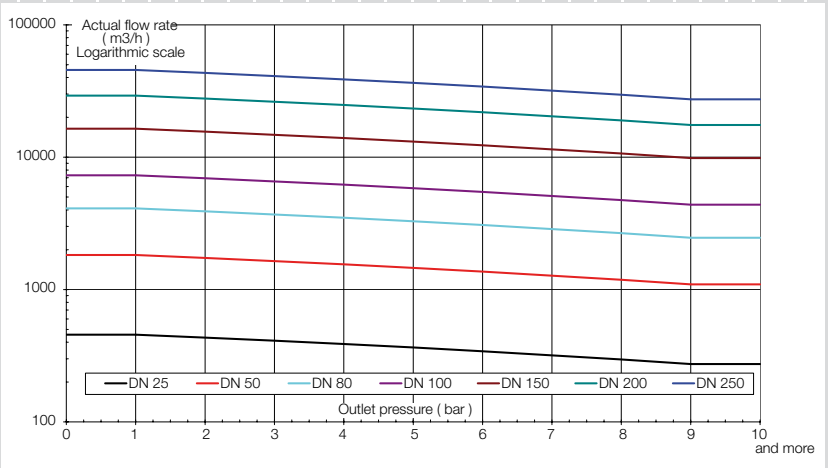
The characteristics listed above are referred to standard products. Special characteristics and materials for specific applications may be supplied upon request.

Cg, K_G and K1 coefficient — Aperflux 851

Nominal diameter (mm)	25	50	80	100*	150*	200*	250*
Size (inches)	1”	2”	3”	4”	6”	8”	10”
Cg flow coefficient	480	1550	3790	5554	11112	17316	24548
K_G flow coefficient	504	1627	3979	5837	11678	18199	25850
K1 body shape factor	113,9	113,9	113,9	113,9	113,9	113,9	113,9

*Value with incorporated flow conditioner
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 m3/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 — Aperflux 851

Aperflux 851 regulators are equipped with series 300 pilot as listed below:
- 302/. control range Wh: 0,8 to 9,5 bar; (11,6 to 137,7 Psig)
- 304/. control range Wh: 7 to 43 bar; (101,5 to 623,5 Psig)
- 305/. control range Wh: 20 to 60 bar; (290 to 870,2 Psig)
- 307/. control range Wh: 41 to 74 bar; (594,6 to 1073,3 Psig)

Pilots may be adjusted manually or remotely

Pilot adjustments — Aperflux 851

Pilot type .../A	Manual setting
Pilot type .../D	Electric remote setting control
Pilot type .../CS	Pneumatic remote setting control
F.I.O.	Smart unit for remote setting, monitoring flow limitation

The pilot system comes complete with an adjustable **AR100** restrictor. The flow rate of the pilot system is controlled by the bleed rate through **AR100** restrictor.
The KG coefficients of the AR100 adjustable restrictor for its various degrees of opening are shown. KG formula used for calculating the flow rate of regulator can be applied for adjustable restrictor **AR100**.
It is necessary to consider that pressure drop through the adjustable **AR100** restrictor should be about 2.9 PSIG (0,2) bar at the minimum opening flow of the regulator and about 14,5 PSIG (1 bar) at the maximum opening flow of regulator main diaphragm.

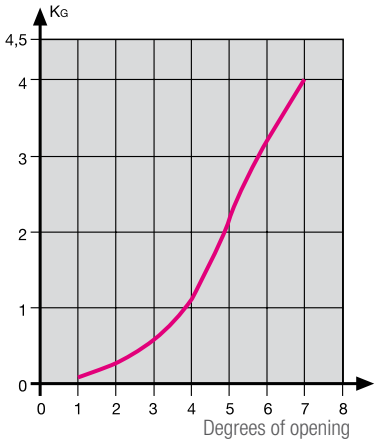


Fig. 6

PRESSOSTATIC DEVICE — Aperflux 851

MOD. SB	MIN.	MAX
101M	0,01* ÷ 0,26*	0,02 ÷ 1*
102M	0,04 ÷ 2,8	0,2 ÷ 5,5
102MH	2,8 ÷ 5,5	0,2 ÷ 5,5
103M	0,2 ÷ 8	2 ÷ 22
103MH	8 ÷ 19	2 ÷ 22
104M	1,6 ÷ 18	7,5 ÷ 45
104MH	18 ÷ 41	7,5 ÷ 45
105M	3 ÷ 44	30 ÷ 90
105MH	44 ÷ 90	30 ÷ 90

MOD. HB	MIN.	MAX
103	0,4 ÷ 6,8	1.3 ÷ 11
104	1,01 ÷ 20,6	10 ÷ 31,5
105	2,5 ÷ 50	25 ÷ 76
105/92	45 ÷ 75	58 ÷ 85

value in bar(g)

IN-LINE MONITOR — Aperflux 851

The monitor is generally installed upstream of the main regulator. Although the function of the monitor regulator is different, the two regulators are virtually identical from the point of view of their mechanical components. The only difference is that monitor is set at a higher pressure than the main regulator. The Cg and KG coefficients of the regulator plus in-line monitor system are about 20% lower than those of the regulator alone.

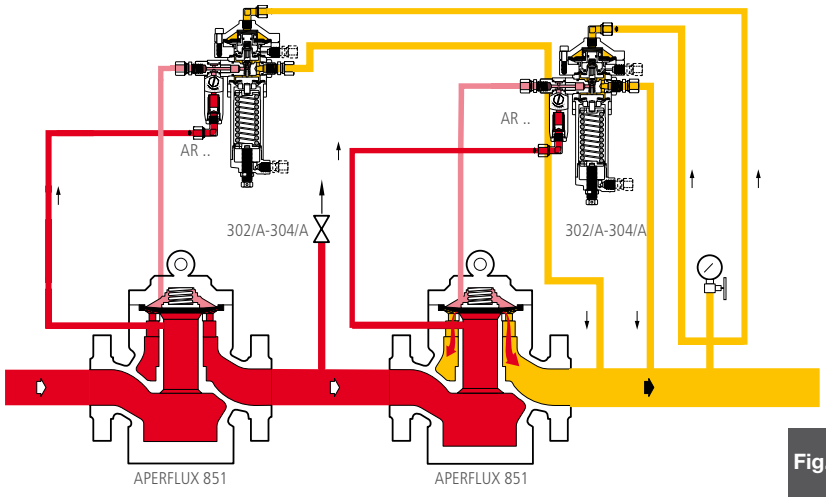
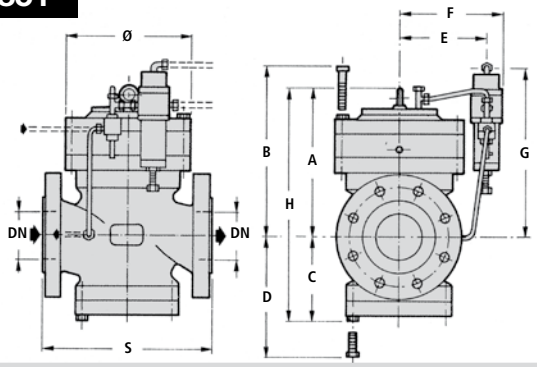


Fig. 7

Aperflux 851 | Aperflux 851



Overal dimensions in mm

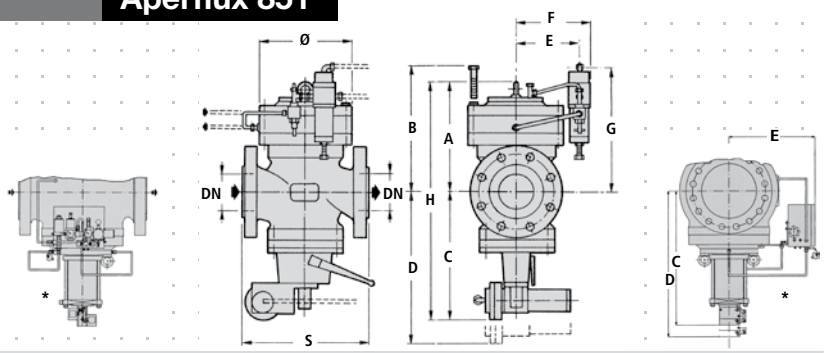
Size (mm)	25	50	80	100	150	200	250
Inches	1"	2"	3"	4"	6"	8"	10"
S - Ansi 150/PN 16	184	254	298	352	451	543	673
S - Ansi 300	197	267	317	368	473	568	708
S - Ansi 600	210	286	336	394	508	609	752
Ø	125	160	245	290	385	490	615
A	200	230	300	340	420	455	580
B	230	260	340	380	470	510	520
C	100	130	150	190	240	265	340
D	130	160	200	250	300	320	440
E	140	145	190	210	260	315	370
F	160	175	220	240	290	345	415
G	260	280	350	380	450	490	380
H	300	360	450	530	660	720	920
Tubing Connections				Δe10 x Δi 8			

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

Weights in Kgf

S - Ansi 150/PN 16	20	35	76	115	235	335	700
S - Ansi 300	21	36	82	128	257	395	750
S - Ansi 600	22	38	85	138	290	435	850

Aperflux 851+ SB82 / + HB97 | Aperflux 851



Overal dimensions in mm

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Inches	1"	2"	3"	4"		6"		8"		10"	
S - Ansi 150/PN 16	184	254	298	352		451		543		673	
S - Ansi 300	197	267	317	368		473		568		708	
S - Ansi 600	210	286	336	394		508		609		752	
Ø	125	160	245	290		385		490		615	
A	200	230	300	340		420		455		580	
B	230	260	340	380		470		510		520	
C	215	240	270	300	518*	375	645*	450	687*	680	796*
D	320	370	420	480	650*	600	835*	665	900*	900	1060*
E	140	145	190	210	358*	260	410*	315	445*	370	510*
F	160	175	220	240		290		345		415	
G	260	280	350	380		450		490		380	
H	415	470	570	640		795		905		1260	
Tubing Connections				Δe10 x Δi 8							

*indicated Dimensions with the MODEL HB/97

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

Weights in Kgf

S - Ansi 150/PN 16	27	44	86	130	260	400	750
S - Ansi 300	27	46	92	145	290	470	800
S - Ansi 600	30	48	96	155	320	510	900

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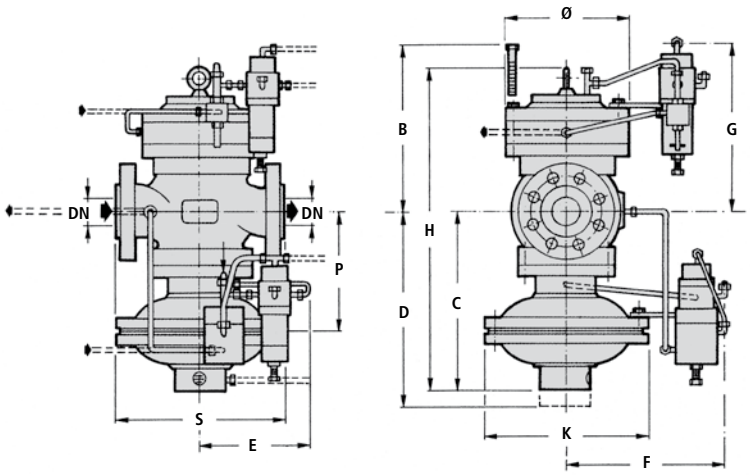

Overal dimensions in mm

Size (mm)	25	50	80	100	150	200	250
Inches	1"	2"	3"	4"	6"	8"	10"
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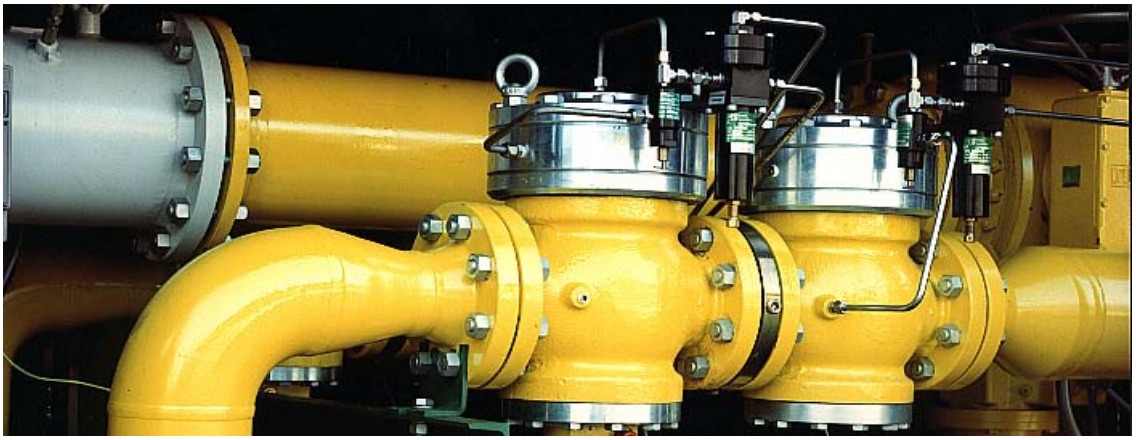
S - Ansi 300	197	267	317	368	473	568	708
S - Ansi 600	210	286	336	394	508	609	752
Ø	125	160	245	290	385	490	615
B	230	260	340	380	470	510	520
C	320	350	430	490	650	750	680
D	410	430	530	600	735	850	900
E	370	370	410	410	485	485	370
F	270	270	310	310	385	385	415
G	260	280	350	380	450	490	380
H	520	580	730	830	1070	1205	1380
K	278	278	360	360	510	510	610
P	170	200	260	290	320	370	500
Tubing Connections				Δe10 x Δi 8			

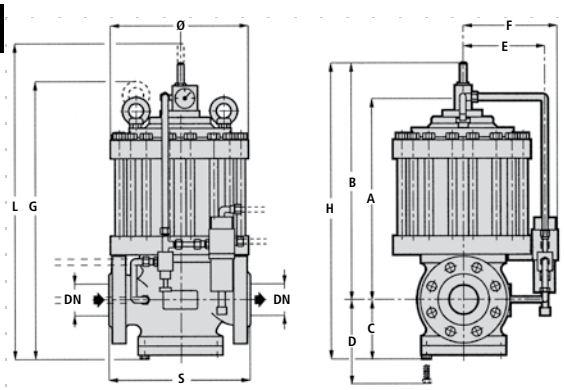
Face to face dimensions S according to IEC 534-3 and EN 334

Weights in Kgf

S - Ansi 150/PN 16	33	68	135	160	370	525	1100
S - Ansi 300	34	70	138	165	390	585	1150
S - Ansi 600	35	72	148	190	420	625	1250



Aperflux 851+ DB/851 — Aperflux 851



Overal dimensions in mm

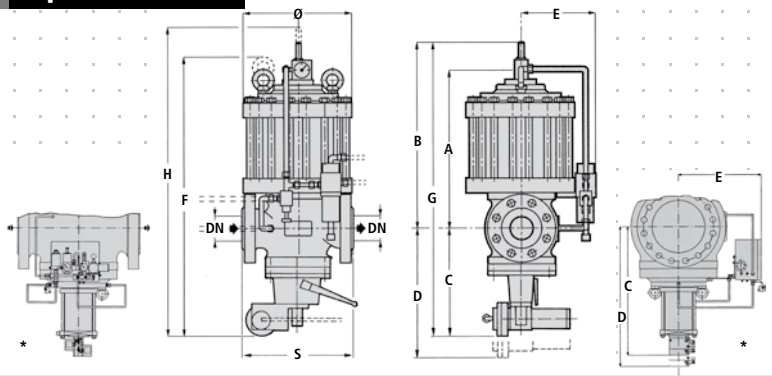
Size (mm)	25	50	80	100	150	200	250
Inches	1"	2"	3"	4"	6"	8"	10"
S - Ansi 150/PN 16	184	254	298	352	451	543	673
S - Ansi 300	197	267	317	368	473	568	708
S - Ansi 600	210	286	336	394	508	609	752
Ø	220	300	330	390	480	645	740
A	355	420	500	570	715	910	1025
B	465	530	625	695	850	1045	1085
C	100	130	150	190	240	265	340
D	130	160	200	250	300	320	440
E	162	196	216	241	234	237	262
F	192	226	246	271	264	267	292
G	370	440	525	595	745	950	1396
H	455	550	650	760	980	1175	1215
L	560	673	792	897	1081	1332	1372
Tubing Connections				Δe10 x Δi 8			

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

Weights in Kgf

S - Ansi 150/PN 16	47	100	168	240	391	760	1240
S - Ansi 300	49	102	177	268	433	834	1292
S - Ansi 600	50	104	180	278	466	874	1392

Aperflux 851+DB/851+SB82 /+HB97 — Aperflux 851



Overal dimensions in mm

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Inches	1"	2"	3"	4"		6"		8"		10"	
S - Ansi 150/PN 16	184	254	298	352		451		543		673	
S - Ansi 300	197	267	317	368		473		568		708	
S - Ansi 600	210	286	336	394		508		609		752	
Ø	220	300	330	390		480		645		740	
A	335	420	500	570		715		910		1025	
B	465	530	625	695		850		1045		1085	
C	215	240	270	300	518*	375	645*	450	687*	680	796*
D	320	370	420	480	650*	600	835*	665	900*	900	1060*
E	192	226	246	271	358*	264	410*	267	445*	292	510*
F	485	550	645	705		880		1135		1736	
G	570	660	770	870		1115		1360		1555	
H	675	783	912	1007		1216		1517		1712	
Tubing Connections				Δe10 x Δi 8							

*indicated Dimensions with the MODEL HB/97

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

Weights in Kgf

S - Ansi 150/PN 16	54	109	178	255	416	825	1290
S - Ansi 300	56	112	187	283	466	909	1342
S - Ansi 600	58	114	191	294	499	949	1442

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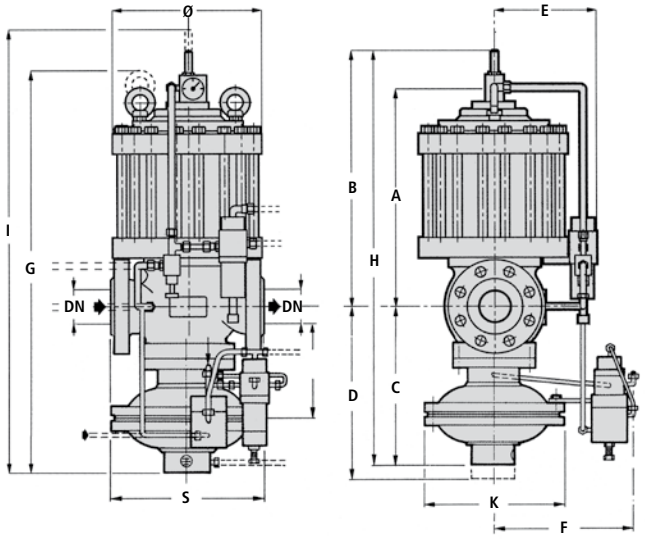

Overal dimensions in mm

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Inches	1"	2"	3"	4"	6"	8"	10"
S - Ansi 150/PN 16	184	254	298	352	451	543	673
S - Ansi 300	197	267	317	368	473	568	708
S - Ansi 600	210	286	336	394	508	609	752
Ø	220	300	330	390	480	645	740
A	355	420	500	570	715	910	1025
B	465	530	625	695	850	1045	1085
C	320	350	430	490	650	750	800
D	410	430	530	600	735	850	900
E	192	226	246	271	264	267	292
F	270	270	310	310	385	385	415
G	590	660	805	895	1155	1435	1856
H	685	750	905	995	1260	1530	1545
I	905	970	1185	1295	1670	2015	2005
Tubing Connections				Δe10 x Δi 8			

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

Weights in Kgf

S - Ansi 150/PN 16	60	133	223	295	526	950	1640
S - Ansi 300	62	135	232	325	568	1024	1692
S - Ansi 600	63	137	235	335	601	1064	1792

Pietro Fiorentini Solutions

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Slam shut valves

Ball valve

Pietro Fiorentini

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