ADL APPENDAGES

GAS PRESSURE REGULATOR – 5 BAR ATEX ND 15 TO 100 – FRG 2MCS

FEATURES

The FRG 2MCS gas pressure regulator is intended to depress the pressure of non-corrosive combustible gas, from the network pressure max Of the static type, it remains tight at zero flow, with no balancing of upstream / downstream pressures, it is featuring a double diaphragm and a relief valve.
This model is compatible for installation in ATEX areas 1 & 21 (II 2G - II 2D)
These pressure regulators are featuring built-in filters from ND15 to ND25.



MODELES DISPONIBLES

Threaded connections from 1/2" to 2"
PN16 flanges from ND65 to ND100
Downstream pressure setting ranges: see table page 4

OPTIONS

External pressure connection
NPT threaded connections
#150 flanged connections
BIOGAZ execution

LIMITS OF USE

Pressure rating: PS	0,5 to 5 bar
Ambient temperature: TS	-15°C / +60°C
Max allowable surface temperature	+60°C

WETTED PARTS

ND	**15 - 25**	**32 - 50**	**65 - 100**
Body	Aluminium EN AB 46100		
Cover & bottom	Aluminium EN AB 46100		
Shutter	Aluminium 11S	Aluminium 11S + Hostaform POM C 9021	Aluminium 11S
Seals & diaphragm	NBR (NBR & FKM in biogas execution)		
Pressure taps	CW614N brass (aluminium or steel in biogas execution)		

DIRECTIVES AND MANUFACTURING STANDARDS

Subject	Standard	Subject	Standard
Gas regulation UE	2016/426	PED directive	2014/68/UE
Product reference regulation	CE 90/396 (EN 88-2)	ATEX directive	2014/34/UE
Gas standard	EN 13611 (Gr 2)	Threaded connections	EN 10226
Accuracy class	AC 10 (P2 ± 10%)	Flanged connections	EN 1092-1

ATEX PROTECTION

The FRG 2MCS pressure regulators has no power source, they are approved for installation in zones 1, 21, 2 & 22 in accordance with the rules of the art (grounding).

ATEX marking	CE Ex II2G II2D

Interventions that can be carried out in place are limited to adjustment, any other intervention must be carried out in the workshop by qualified personnel (change of filter, diaphragm).

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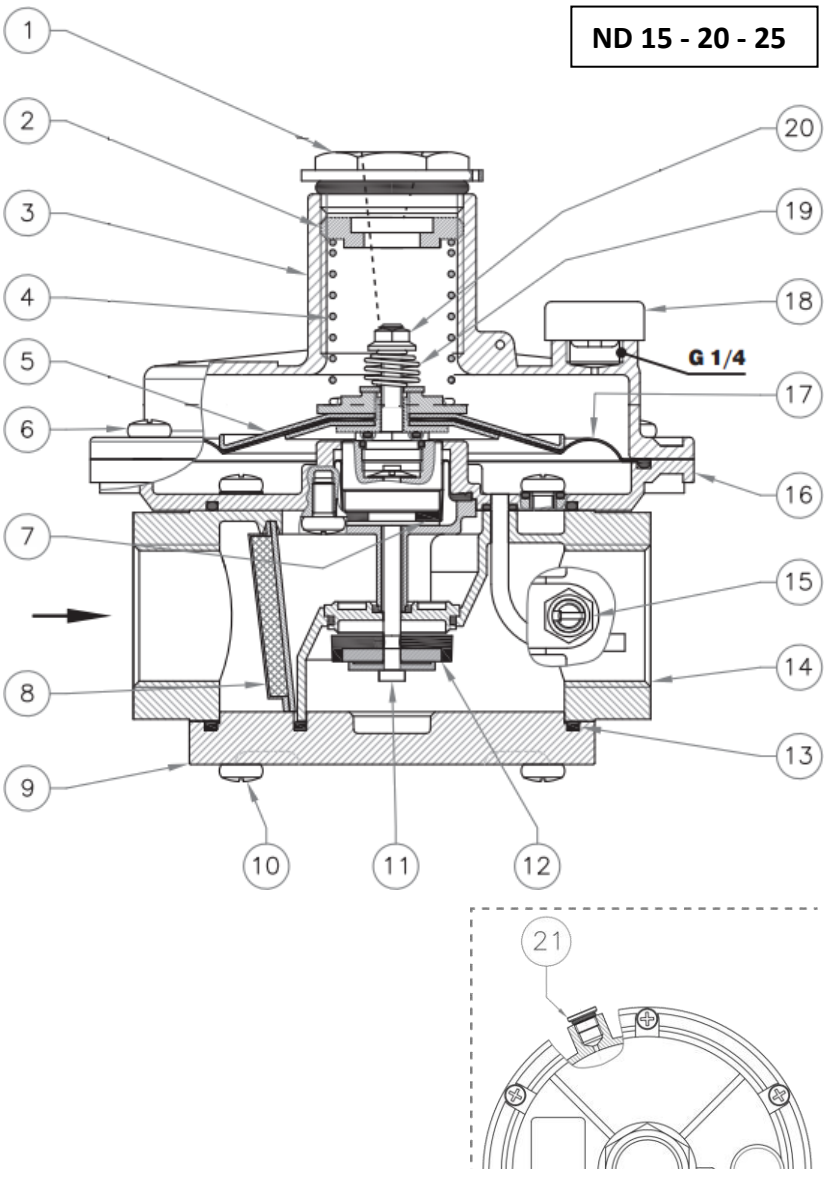
FUNCTIONING

The FRG 2MCS regulator is used to reduce and stabilize the gas pressure before use, the pressure adjustment is made by acting on a screw accessible inside the upper tube of the device, it can be controlled by connecting a pressure gauge to the downstream 1/8" pressure tap:

- Close the upstream and downstream valves
- Connect a pressure gauge at a distance of 5 ND downstream (the pressure nipple is intended for control only)
- Remove the protective cap from the adjustment device
- Depending on the ND, use the recommended tool to adjust the desired pressure.
- Slowly open the upstream shut-off valve
- Ensure the stabilization of the downstream pressure, adjust if necessary
- Slowly open the downstream valve
- Check the seals, replace the adjustment protection

CONSTRUCTION - ND 15 TO 25

N°	Item
1	Setting device cap
2	Downstream pressure setting
3	Top cover
4	Pressure setting spring
5	Upper diaphragm disc
6	Top cover fastening screws
7	Compensation diaphragm
8	Filter
9	Bottom
10	Bottom fastening screw
11	Main shaft
12	Shutter
13	Bottom O-Ring sealing
14	Body
15	Pressure test nipple
16	Flange
17	Functioning diaphragm
18	Dust cap
19	Relief setting spring
20	Relief setting
21	External pressure connection

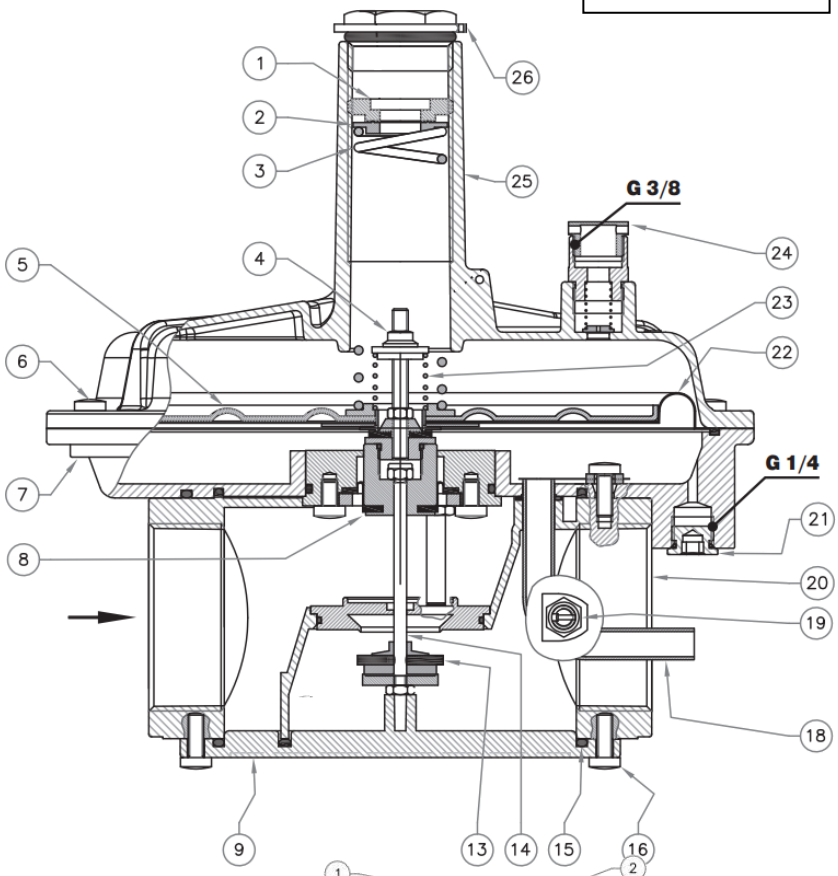


GAS PRESSURE REGULATOR – 5 BAR ATEX ND 15 TO 100 – FRG 2MCS

CONSTRUCTION - ND 32 TO 50

N°	Item
1	Setting device cap
2	Setting spring washer
3	Setting spring
4	Relief setting
5	Upper diaphragm disc
6	Top cover fastening screws
7	Flange
8	Compensation diaphragm
9	Bottom
13	Shutter
14	Main shaft
15	Bottom O-Ring sealing
16	Bottom fastening screws
18	Internal pressure tube
19	Pressure test nipple
20	Body
21	External pressure connection
22	Functioning diaphragm
23	Relief setting spring
24	Dust cap
25	Top cover
26	Setting device cap

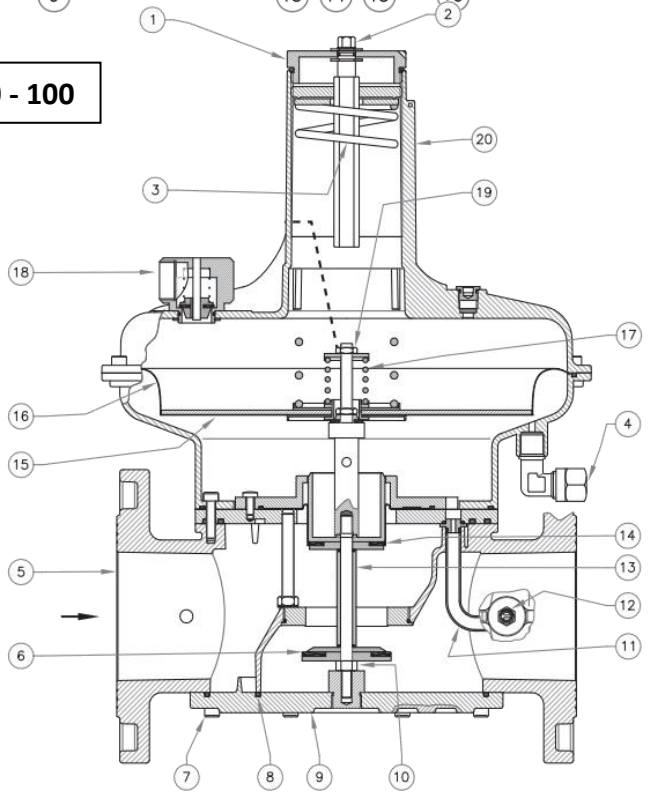
ND 32 - 40 - 50



CONSTRUCTION - ND 65 TO 100

N°	Item
1	Setting device cap
2	Pressure setting
3	Pressure setting spring
4	External pressure connection
5	Body
6	Shutter
7	Bottom fastening screw
8	Bottom O-Ring sealing
9	Bottom
10	Shutter nut
11	Internal pressure tube
12	Pressure test nipple
13	Shutter
14	Compensation diaphragm
15	Upper diaphragm disc
16	Functioning diaphragm
17	Relief setting spring
18	Relief drain
19	Relief setting
20	Top cover

ND 65 - 80 - 100



ADL APPENDAGES

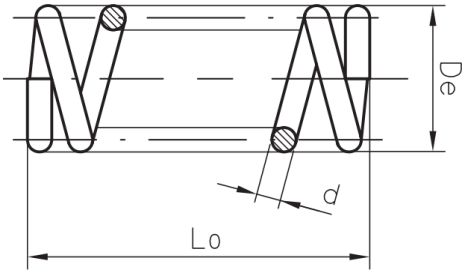
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SETTING RANGES

Downstream pressure			
ND	Setting range mbar	Spring code	Spring dimensions d x De x Lo x it
15 - 20 - 25	10 ÷ 25	MO-0403	1,5x29x46x6
	20 ÷ 30	MO-0410	1,5x29x58x7
	30 ÷ 60	MO-0430	2x29x49x7
	60 ÷ 90	MO-0460	2x29x66x7
	90 ÷ 170	MO-0520	2,5x29x50x7
32 - 40 - 50	10 ÷ 22	MO-0825	2,2x29x100x12
	17 ÷ 32	MO-0850	2,2x29x140x18
	32 ÷ 60	MO-0970	2,5x29x155x16
	50 ÷ 95	MO-1000	3,2x29x123x15,5
65 - 80	13 ÷ 22	MO-1100	4,5x70x200x15,5
	20 ÷ 55	MO-1200	5x70x205x9,5
	50 ÷ 130	MO-1400\ZN	6x70x214x10,5
100	13 ÷ 22	MO-1100	4,5x70x200x15,5
	22 ÷ 55	MO-1200	5x70x205x9,5
	45 ÷ 120	MO-1400\ZN	6x70x214x10,5

Differential pressure (relief)		
Relief range mbar	Spring code	Spring dimensions d x De x Lo x it
5 ÷ 10	MO-0153	0,9x17x45x7
10 ÷ 60	MO-1950	0,9x11x5x20,5x8
60 ÷ 110	MO-2205	1,1x8x15x6
10÷20	MO-0214	1,3x17x40x6
15÷40	MO-0215	1,8x18,4x45x8,5
40÷80	MO-2150	2x17x54x9
50÷120	MO-3505	2,5x18x50x8,5
15 ÷ 50	MO-1320	3,5x29,8x64x9
20 ÷ 100	MO-2550	4x29x98x8

it : total number of turns



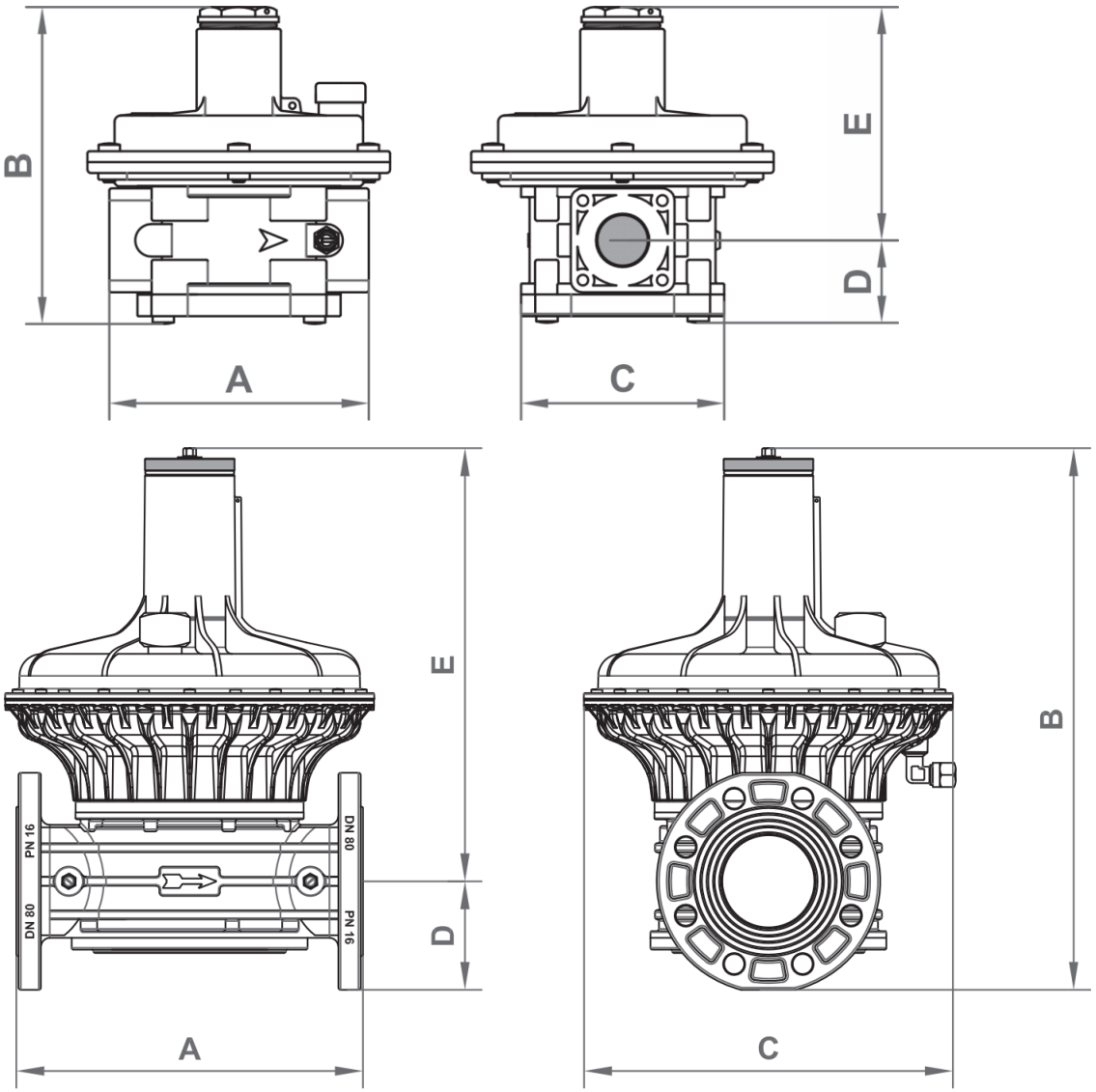
FLOWRATES - Nm³/h

ND		15				20				25				32				40			
Downstream pressure (mbar)		20	30	50	100	20	30	50	100	20	30	50	100	20	30	50	100	20	30	50	100
Inlet pressure (bar)	0,5	25	37	50	60	42	50	70	100	100	100	100	100	270	270	270	250	270	270	270	260
	1	27	37	50	62	42	50	70	100	100	100	100	100	430	430	410	400	430	430	430	420
	2	30	37	50	62	50	55	70	100	100	100	100	100	450	510	600	650	690	690	700	690
	3	30	39	50	62	50	55	70	100	100	100	100	100	450	510	620	740	700	700	860	950
	4	30	39	50	62	50	55	70	100	100	100	100	100	450	510	620	740	700	700	870	1050
	5	37	39	50	62	50	55	70	100	100	100	100	100	450	510	620	740	700	700	890	1070

ND		50				65				80				100			
Downstream pressure (mbar)		20	30	50	100	20	30	50	100	20	30	50	100	20	30	50	100
Inlet pressure (bar)	0,5	300	300	300	280	1000	1100	1090	1100	1350	1450	1240	1350	1670	1500	1500	1700
	1	460	460	460	450	1490	1240	1450	1670	1950	2150	2100	2350	2400	2400	2480	2400
	2	750	750	750	740	1800	2125	1850	2100	2450	2650	3100	3450	3100	3200	3700	3800
	3	990	1000	1000	1000	1625	2230	2230	2250	2450	2600	2850	3450	3800	3800	4900	5000
	4	1290	1300	1300	1300	1670	1380	2400	2400	2450	2700	3100	3700	3800	3800	4900	5000
	5	1500	1500	1500	1500	1750	1480	1850	1950	2600	2700	3200	3840	3800	3800	4900	5000

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DIMENSIONS (mm)



Overall dimensions in mm							
FF	**PN16 flanges**	**Nb of holes**	**A**	**B (=D+E)**	**C**	**D**	**E**
1/2"	**-**	-	120	147	140	38,5	108,5
3/4"	**-**	-	120	147	140	38,5	108,5
1"	**-**	-	120	147	140	38,5	108,5
1"1/4	**-**	-	160	242	225	48,5	193,5
1"1/2	**-**	-	160	242	225	48,5	193,5
2"	**-**	-	160	242	225	48,5	193,5
	65	4	290	477	330	90	387
	80	8	310	484	330	90	387
	100	8	350	510	330	106	404

Gegevens ter indicatie, wijzigingen voorbehouden.