

# GAS PRESSURE REGULATORS WITH RELIEF VALVE

Serie IRQ5 ...



## DESCRIPTION

Direct-operated gas pressure regulator with compensated obturator.

**P2 > 1 bar; Pmax = 5 bar**

This devices are equipped with the following safety devices and accessories:

- **relief valve:**  
it vents outside small quantity of gas in case there are downstream regulator overpressure. That exhaust it is conveyed outside in case of installation in environment with bad ventilation
  - **outlet over pressure shut-off device (OPSO):** it stops the gas flow when the regulator outlet pressure goes up the device setting value
  - **outlet under pressure shut-off device (UPSO):** it stops the gas flow when the regulator outlet pressure goes down the device setting value. It closes even if there is no inlet pressure.
  - **outlet pressure test point.**
  - **inlet filter available (only for DN 15- DN 20-DN 25)**
- In conformity with EN 88-2 and EN 334  
- In conformity with the 2009/142/EC Directive (Gas Directive)  
- In conformity with the 2014/68/EU Directive (PED Directive)  
- In conformity with the 2014/34/EU Directive (ATEX Directive)

## IDENTIFICATION

**IRQ 5 F 02N 622 A B**

Gas pressure regulator  
with P2 = 0,8 ÷ 5 bar **series IRQ...**

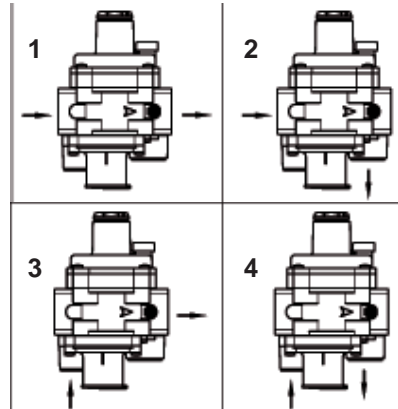
**Pmax**  
5 = Pmax 0,5 ÷ 5 bar

**Inlet filter**  
F = filter (only for DN 15- DN 20-DN 25)

**B = biogas**

### Versions

**A** = with valve relief  
**O(\*)** = with OPSO, UPSO and valve relief  
\* = substitute with the number corresponding to model 1, 2, 3 or 4.



**Settings: see tables**

**622** = setting spring (mbar)  
(P2+diff. relief valve range)  
**802** = setting spring (mbar)  
(P2+OPSO+UPS0+diff. relief valve range)  
.....

**NOTE: not all combinations are possible  
Please contact the technical department.**

### Connections

Threaded				Flanged			
Code	GAS	Code NPT	NPT	Code	PN 16	Code ANSI	ANSI PN 16
02	DN 15 (G 1/2")	02N	DN 15 (NPT 1/2")				
03	DN 20 (G 3/4")	03N	DN 20 (NPT 3/4")				
04	DN 25 (G 1")	04N	DN 25 (NPT 1")				
05	DN 32 (G 1 1/4")	05N	DN 32 (NPT 1 1/4")	32	DN 32	32A	DN 32 ANSI
06	DN 40 (G 1 1/2")	06N	DN 40 (NPT 1 1/2")	40	DN 40	40A	DN 40 ANSI
07	DN 50 (G 2")	07N	DN 50 (NPT 2")	50	DN 50	50A	DN 50 ANSI
				08	DN 65	08A	DN 65 ANSI
				09	DN 80	09A	DN 80 ANSI
				10	DN 100	10A	DN 100 ANSI

## GENERAL DATA

### TECHNICAL DATA

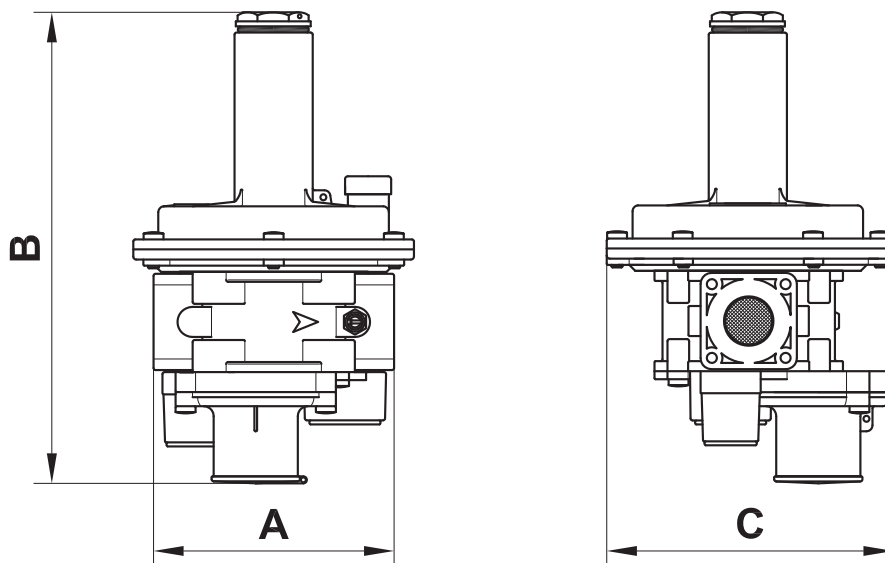
- Use: not aggressive gases of the 3 families (dry gases)
- Threaded connections Rp: (DN 15 ÷ DN 50) according to EN 10226
- Flanged connections PN 16: (DN 32 ÷ DN 100) according to ISO 7005
- On request ANSI 150 flanged connections
- Max. working pressure: 5 bar
- Environment temperature: -40 ÷ +60 °C
- Max superficial temperature: 60 °C
- P2 accuracy class (**AC**): 10
- Overpressure lockout accuracy group (**AG**): 10
- Closing pressure class (**SG**): 30
- Trip pressure range: see springs tables
- Shut-off closure time: < 1 s
- Relief valve: tested according to EN 334
- Vent connection: G 1/4"
- Mechanical strength: Group 2 (according to EN 13611:2007)
- Safety factor: 20 bar

### MATERIALS

- Die-cast aluminium (UNI EN 1706)
- OT-58 brass (UNI EN 12164)
- 11S aluminium (UNI 9002-5)
- Stainless steel (UNI EN 10088)
- NBR rubber (UNI 7702)
- Nylon 30% glass fibre (UNI EN ISO 11667)

## DIMENSIONS

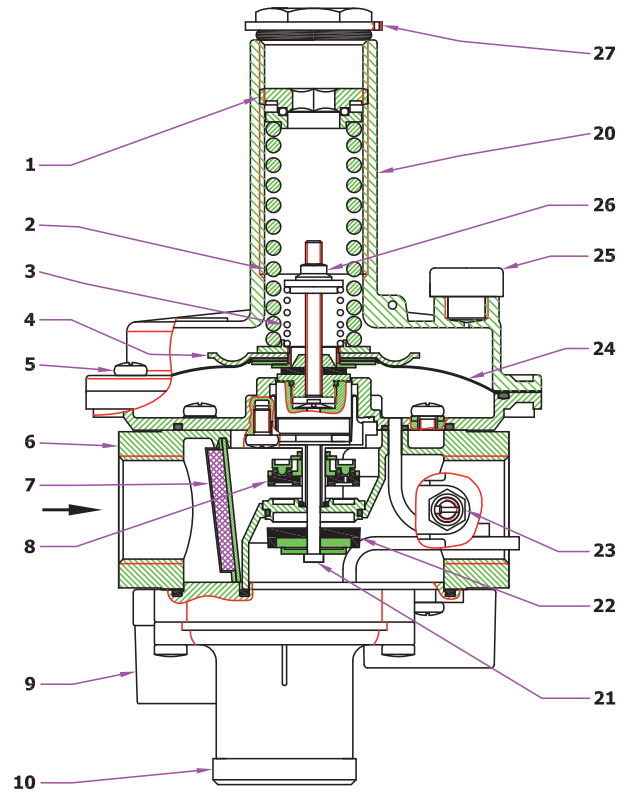
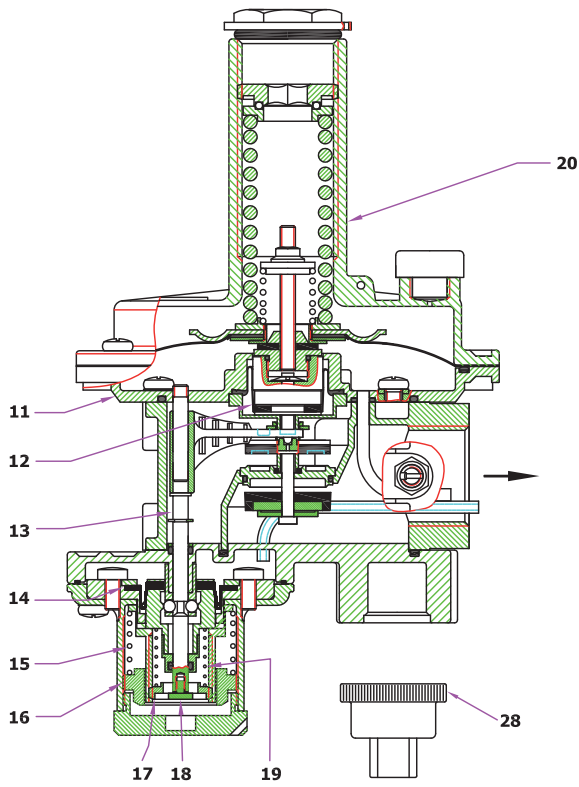
Threaded connections	Flanged connections	A	B	C
DN 15 - DN 20 - DN 25	-	120	237	143
DN 32 - DN 40 - DN 50	-	160	260	225
-	DN 32 - DN 40 - DN 50	230	310	225
	DN 65	290	428	330
	DN 80	310	435	330
	DN 100	350	500	330



# COMPONENTS

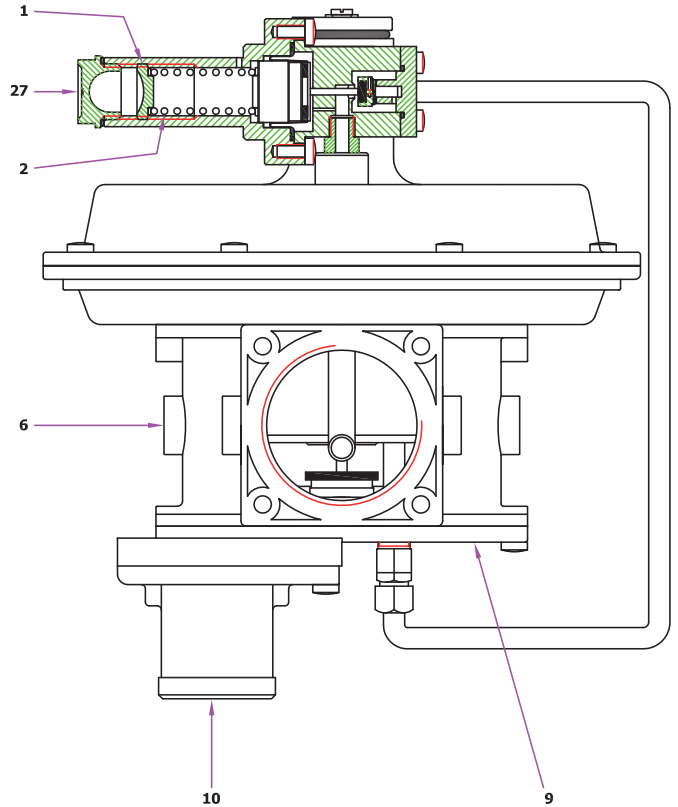
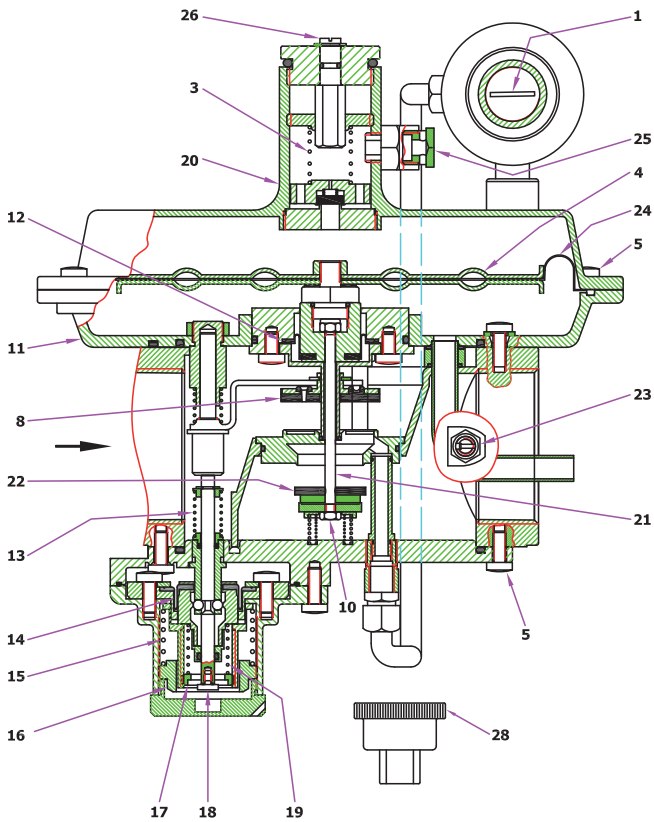
DN 15 ÷ DN 25

fig. 1



DN 32 ÷ DN 100

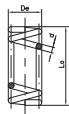
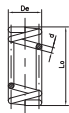
fig. 2



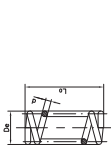
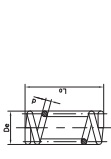
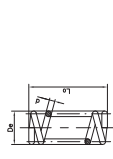
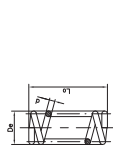
**LEGEND**

- |  |  |                                  |                                 |
|--|--|----------------------------------|---------------------------------|
| 1 - P2 calibration screw               | 8 - Closure member (shut off)          | 15 - Max shut off setting spring | 22 - Closure member (regulator) |
| 2 - P2 setting spring                  | 9 - Bottom                             | 16 - Max shut off calibration    | 23 - Pressure nipple            |
| 3 - Relief valve setting spring        | 10 - Closing cap (shut off)            | 17 - Min shut off calibration    | 24 - Working diaphragm          |
| 4 - Diaphragm upper disc               | 11 - Flange (only on standard version) | 18 - Reset pin                   | 25 - Antidust cap               |
| 5 - Fixing screws                      | 12 - Compensation diaphragm            | 19 - Min shut off setting spring | 26 - Relief calibration         |
| 6 - Body                               | 13 - Central pin (shut off)            | 20 - Funnel                      | 27 - Closing cap (regulator)    |
| 7 - Filtering organ (only on IRQ5F...) | 14 - Working shut off diaphragm        | 21 - Central pin (regulator)     | 28 - Special key for setting    |

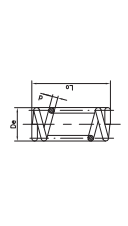
## SETTINGS SPRINGS for REGULATOIRS WITH VALVE RELIEF

THREADED CONNECTIONS					
Connections	P2 (bar)	Code and dimensions (d x De x Lo x *it) (mm)	Differential relief valve range (bar)	Code and dimensions (d x De x Lo x *it) (mm)	Code SPRING
					
<b>DN 15 IRQ5...A / IRQ5F...A</b>	0,9 ÷ 1,5	M07 (3,5x29,8x98x11,5)	0,2 ÷ 1	M35 (2x17x54x9)	<b>622</b>
	1,5 ÷ 1,8	M12 (4X29X98X8)	0,2 ÷ 1	M35 (2x17x54x9)	<b>623</b>
	1,8 ÷ 3,6	M58 (4,5X29X20X94)	0,2 ÷ 1	M35 (2x17x54x9)	<b>624</b>
<b>DN 20 IRQ5...A / IRQ5F...A</b>	0,9 ÷ 1,5	M07 (3,5x29,8x98x11,5)	0,2 ÷ 1	M35 (2x17x54x9)	<b>622</b>
	1,5 ÷ 1,8	M12 (4X29X98X8)	0,2 ÷ 1	M35 (2x17x54x9)	<b>623</b>
	1,8 ÷ 3,6	M58 (4,5X29X20X94)	0,2 ÷ 1	M35 (2x17x54x9)	<b>624</b>
<b>DN 25 IRQ5...A / IRQ5F...A</b>	0,9 ÷ 1,5	M07 (3,5x29,8x98x11,5)	0,2 ÷ 1	M35 (2x17x54x9)	<b>622</b>
	1,5 ÷ 1,8	M12 (4X29X98X8)	0,2 ÷ 1	M35 (2x17x54x9)	<b>623</b>
	1,8 ÷ 3,6	M58 (4,5X29X20X94)	0,2 ÷ 1	M35 (2x17x54x9)	<b>624</b>
THREADED CONNECTIONS					
Connections	P2 (bar)	Code and dimensions (d x De x Lo x *it) (mm)	Effective relief valve range (bar)	Code and dimensions (d x De x Lo x it) (mm)	Code SPRING
<b>DN 32 IRQ5...A</b>	0,8 ÷ 1,5	M35 (2x17x54x9)	0,9 ÷ 2	M20 (2,2x29x47x6,5)	<b>625</b>
	1,5 ÷ 2,5	M36 (18X2,5X50X8)	1,5 ÷ 3	M20 (2,2x29x47x6,5)	<b>626</b>
	2,2 ÷ 3	M36 (18X2,5X50X8)	2,5 - 3,9	M34 (1,8x18,4x45x8,5)	<b>627</b>
<b>DN 40 IRQ5...A</b>	0,8 ÷ 1,5	M35 (2x17x54x9)	0,9 ÷ 2	M20 (2,2x29x47x6,5)	<b>625</b>
	1,5 ÷ 2,5	M36 (18X2,5X50X8)	1,5 ÷ 3	M20 (2,2x29x47x6,5)	<b>626</b>
	2,2 ÷ 3	M36 (18X2,5X50X8)	2,5 - 3,9	M34 (1,8x18,4x45x8,5)	<b>627</b>
<b>DN 50 IRQ5...A</b>	0,8 ÷ 1,5	M35 (2x17x54x9)	0,9 ÷ 2	M20 (2,2x29x47x6,5)	<b>625</b>
	1,5 ÷ 2,5	M36 (18X2,5X50X8)	1,5 ÷ 3	M20 (2,2x29x47x6,5)	<b>626</b>
	2,2 ÷ 3	M36 (18X2,5X50X8)	2,5 - 3,9	M34 (1,8x18,4x45x8,5)	<b>627</b>
FLANGED CONNECTIONS					
Connections	P2 (bar)	Code and dimensions (d x De x Lo x *it) (mm)	Differential relief valve range (bar)	Code and dimensions (d x De x Lo x *it) (mm)	Code SPRING
					
<b>DN 32 IRQ5...A</b>	0,8 ÷ 1,5	M35 (2x17x54x9)	0,9 ÷ 2	M20 (2,2x29x47x6,5)	<b>625</b>
	1,5 ÷ 2,5	M36 (18X2,5X50X8)	1,5 ÷ 3	M20 (2,2x29x47x6,5)	<b>626</b>
	2,2 ÷ 3	M36 (18X2,5X50X8)	2,5 - 3,9	M34 (1,8x18,4x45x8,5)	<b>627</b>
<b>DN 40 IRQ5...A</b>	0,8 ÷ 1,5	M35 (2x17x54x9)	0,9 ÷ 2	M20 (2,2x29x47x6,5)	<b>625</b>
	1,5 ÷ 2,5	M36 (18X2,5X50X8)	1,5 ÷ 3	M20 (2,2x29x47x6,5)	<b>626</b>
	2,2 ÷ 3	M36 (18X2,5X50X8)	2,5 - 3,9	M34 (1,8x18,4x45x8,5)	<b>627</b>
<b>DN 50 IRQ5...A</b>	0,8 ÷ 1,5	M35 (2x17x54x9)	0,9 ÷ 2	M20 (2,2x29x47x6,5)	<b>625</b>
	1,5 ÷ 2,5	M36 (18X2,5X50X8)	1,5 ÷ 3	M20 (2,2x29x47x6,5)	<b>626</b>
	2,2 ÷ 3	M36 (18X2,5X50X8)	2,5 - 3,9	M34 (1,8x18,4x45x8,5)	<b>627</b>
<b>DN 65 IRQ5...A</b>	0,8 ÷ 1,5	M35 (2x17x54x9)	0,9 ÷ 2	M20 (2,2x29x47x6,5)	<b>625</b>
	1,5 ÷ 2,5	M36 (18X2,5X50X8)	1,5 ÷ 3	M20 (2,2x29x47x6,5)	<b>626</b>
	2,2 ÷ 3	M36 (18X2,5X50X8)	2,5 - 3,9	M34 (1,8x18,4x45x8,5)	<b>627</b>
<b>DN 80 IRQ5...A</b>	0,8 ÷ 1,5	M35 (2x17x54x9)	0,9 ÷ 2	M20 (2,2x29x47x6,5)	<b>625</b>
	1,5 ÷ 2,5	M36 (18X2,5X50X8)	1,5 ÷ 3	M20 (2,2x29x47x6,5)	<b>626</b>
	2,2 ÷ 3	M36 (18X2,5X50X8)	2,5 - 3,9	M34 (1,8x18,4x45x8,5)	<b>627</b>
<b>DN 100 IRQ5...A</b>	0,8 ÷ 1,5	M35 (2x17x54x9)	0,9 ÷ 2	M20 (2,2x29x47x6,5)	<b>625</b>
	1,5 ÷ 2,5	M36 (18X2,5X50X8)	1,5 ÷ 3	M20 (2,2x29x47x6,5)	<b>626</b>
	2,2 ÷ 3	M36 (18X2,5X50X8)	2,5 - 3,9	M34 (1,8x18,4x45x8,5)	<b>627</b>

**PRESSURE CAPACITIES for REGULATORS WITH OPZO, UPZO and VALVE RELIEF**

THREADED CONNECTIONS										
Connections	P2 (bar)	Code and dimensions (d x De x Lo x *it) (mm)		OPZO range (bar)	Code and dimensions (d x De x Lo x it) (mm)	UPZO range (bar)	Code and dimensions (d x De x Lo x it) (mm)	Differential relief valve range (bar)	Code and dimensions (d x De x Lo x it) (mm)	Code SPRING
										
DN 15 IRQ5...O / IRQ5F...O	0,9 ÷ 1,5	M07 (3,5x29,8x98x11,5)		1 ÷ 2	M55 (2,5x35x27x2,25)	0,6 ÷ 0,8	M43 (1,2x15x40x5)	0,2 ÷ 1	M35 (2x17x54x9)	802
	1,5 ÷ 1,8	M12 (4x29x98x8)		2,2 ÷ 3,3	ME (3x35x30x3,5)	0,6 ÷ 0,8	M43 (1,2x15x40x5)	0,2 ÷ 1	M35 (2x17x54x9)	812
	1,8 ÷ 3,6	M58 (4,5x29x20x94)		3,2 ÷ 4,2	M56 (3x35x33,5x3,5)	1,4 ÷ 2,6	M32 (2x17x29x6)	0,2 ÷ 1	M35 (2x17x54x9)	830
DN 20 IRQ5...O / IRQ5F...O	0,9 ÷ 1,5	M07 (3,5x29,8x98x11,5)		1 ÷ 2	M55 (2,5x35x27x2,25)	0,6 ÷ 0,8	M43 (1,2x15x40x5)	0,2 ÷ 1	M35 (2x17x54x9)	802
	1,5 ÷ 1,8	M12 (4x29x98x8)		2,2 ÷ 3,3	ME (3x35x30x3,5)	0,6 ÷ 0,8	M43 (1,2x15x40x5)	0,2 ÷ 1	M35 (2x17x54x9)	812
	1,8 ÷ 3,6	M58 (4,5x29x20x94)		3,2 ÷ 4,2	M56 (3x35x33,5x3,5)	1,4 ÷ 2,6	M32 (2x17x29x6)	0,2 ÷ 1	M35 (2x17x54x9)	830
DN 25 IRQ5...O / IRQ5F...O	0,9 ÷ 1,5	M07 (3,5x29,8x98x11,5)		1 ÷ 2	M55 (2,5x35x27x2,25)	0,6 ÷ 0,8	M43 (1,2x15x40x5)	0,2 ÷ 1	M35 (2x17x54x9)	802
	1,5 ÷ 1,8	M12 (4x29x98x8)		2,2 ÷ 3,3	ME (3x35x30x3,5)	0,6 ÷ 0,8	M43 (1,2x15x40x5)	0,2 ÷ 1	M35 (2x17x54x9)	812
	1,8 ÷ 3,6	M58 (4,5x29x20x94)		3,2 ÷ 4,2	M56 (3x35x33,5x3,5)	1,4 ÷ 2,6	M32 (2x17x29x6)	0,2 ÷ 1	M35 (2x17x54x9)	830
FLANGED CONNECTIONS										
Connections	P2 (bar)	Code and dimensions (d x De x Lo x *it) (mm)		OPZO range (bar)	Code and dimensions (d x De x Lo x it) (mm)	UPZO range (bar)	Code and dimensions (d x De x Lo x it) (mm)	Differential relief valve range (bar)	Code and dimensions (d x De x Lo x it) (mm)	Code SPRING
										
DN 32 IRQ5...O	0,8 ÷ 1,5	M35 (2x17x54x9)		0,9 ÷ 2	M55 (2,5x35x27x2,25)	0,45 ÷ 0,75	M43 (1,2x15x40x5)	0,9 ÷ 2	M20 (2,2x29x47x6,5)	831
	1,5 ÷ 2,5	M36 (18x2,5x50x8)		2,2 ÷ 3,3	ME (3x35x30x3,5)	1 ÷ 1,7	M43 (1,2x15x40x5)	1,5 ÷ 3	M20 (2,2x29x47x6,5)	832
	2,2 ÷ 3	M36 (18x2,5x50x8)		3,2 ÷ 4,2	M56 (3x35x33,5x3,5)	1,4 ÷ 2,6	M32 (2x17x29x6)	2,5 - 3,9	M34 (1,8x18,4x45x8,5)	833
DN 40 IRQ5...O	0,8 ÷ 1,5	M35 (2x17x54x9)		0,9 ÷ 2	M55 (2,5x35x27x2,25)	0,45 ÷ 0,75	M43 (1,2x15x40x5)	0,9 ÷ 2	M20 (2,2x29x47x6,5)	831
	1,5 ÷ 2,5	M36 (18x2,5x50x8)		2,2 ÷ 3,3	ME (3x35x30x3,5)	1 ÷ 1,7	M43 (1,2x15x40x5)	1,5 ÷ 3	M20 (2,2x29x47x6,5)	832
	2,2 ÷ 3	M36 (18x2,5x50x8)		3,2 ÷ 4,2	M56 (3x35x33,5x3,5)	1,4 ÷ 2,6	M32 (2x17x29x6)	2,5 - 3,9	M34 (1,8x18,4x45x8,5)	833
DN 50 IRQ5...O	0,8 ÷ 1,5	M35 (2x17x54x9)		0,9 ÷ 2	M55 (2,5x35x27x2,25)	0,45 ÷ 0,75	M43 (1,2x15x40x5)	0,9 ÷ 2	M20 (2,2x29x47x6,5)	831
	1,5 ÷ 2,5	M36 (18x2,5x50x8)		2,2 ÷ 3,3	ME (3x35x30x3,5)	1 ÷ 1,7	M43 (1,2x15x40x5)	1,5 ÷ 3	M20 (2,2x29x47x6,5)	832
	2,2 ÷ 3	M36 (18x2,5x50x8)		3,2 ÷ 4,2	M56 (3x35x33,5x3,5)	1,4 ÷ 2,6	M32 (2x17x29x6)	2,5 - 3,9	M34 (1,8x18,4x45x8,5)	833

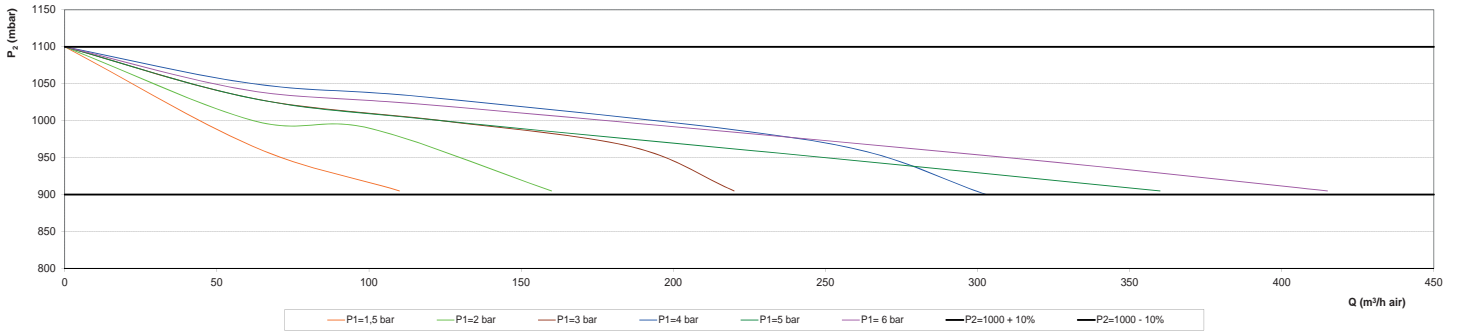
**PRESSURE CAPACITIES for REGULATORS WITH OPSO, UPSO and VALVE RELIEF**

<b>FLANGED CONNECTIONS</b>											
Connections	P2 (bar)	Code and dimensions (d x De x Lo x *It) (mm)		OPSO range (bar)	Code and dimensions (d x De x Lo x it) (mm)		UPSO range (bar)	Code and dimensions (d x De x Lo x it) (mm)		Code SPRING	
											
<b>DN 32 IRQ5...O</b>	0,8 ÷ 1,5	M35 (2x17x54x9)		0,9 ÷ 2	M55 (2,5x35x27x2,25)		0,45 ÷ 0,75	M43 (1,2x15x40x5)		M20 (2,2x29x47x6,5)	<b>831</b>
	1,5 ÷ 2,5	M36 (18x2,5x50x8)		2,2 ÷ 3,3	ME (3x35x30x3,5)		1 ÷ 1,7	M43 (1,2x15x40x5)		M20 (2,2x29x47x6,5)	<b>832</b>
	2,2 ÷ 3	M36 (18x2,5x50x8)		3,2 ÷ 4,2	M56 (3x35x33,5x3,5)		1,4 ÷ 2,6	M32 (2x17x29x6)		M34 (1,8x18,4x45x8,5)	<b>833</b>
<b>DN 40 IRQ5...O</b>	0,8 ÷ 1,5	M35 (2x17x54x9)		0,9 ÷ 2	M55 (2,5x35x27x2,25)		0,45 ÷ 0,75	M43 (1,2x15x40x5)		M20 (2,2x29x47x6,5)	<b>831</b>
	1,5 ÷ 2,5	M36 (18x2,5x50x8)		2,2 ÷ 3,3	ME (3x35x30x3,5)		1 ÷ 1,7	M43 (1,2x15x40x5)		M20 (2,2x29x47x6,5)	<b>832</b>
	2,2 ÷ 3	M36 (18x2,5x50x8)		3,2 ÷ 4,2	M56 (3x35x33,5x3,5)		1,4 ÷ 2,6	M32 (2x17x29x6)		M34 (1,8x18,4x45x8,5)	<b>833</b>
<b>DN 50 IRQ5...O</b>	0,8 ÷ 1,5	M35 (2x17x54x9)		0,9 ÷ 2	M55 (2,5x35x27x2,25)		0,45 ÷ 0,75	M43 (1,2x15x40x5)		M20 (2,2x29x47x6,5)	<b>831</b>
	1,5 ÷ 2,5	M36 (18x2,5x50x8)		2,2 ÷ 3,3	ME (3x35x30x3,5)		1 ÷ 1,7	M43 (1,2x15x40x5)		M20 (2,2x29x47x6,5)	<b>832</b>
	2,2 ÷ 3	M36 (18x2,5x50x8)		3,2 ÷ 4,2	M56 (3x35x33,5x3,5)		1,4 ÷ 2,6	M32 (2x17x29x6)		M34 (1,8x18,4x45x8,5)	<b>833</b>
<b>DN 65 IRQ5...O</b>	0,8 ÷ 1,5	M35 (2x17x54x9)		0,9 ÷ 2	M55 (2,5x35x27x2,25)		0,45 ÷ 0,75	M43 (1,2x15x40x5)		M20 (2,2x29x47x6,5)	<b>831</b>
	1,5 ÷ 2,5	M36 (18x2,5x50x8)		2,2 ÷ 3,3	ME (3x35x30x3,5)		1 ÷ 1,7	M43 (1,2x15x40x5)		M20 (2,2x29x47x6,5)	<b>832</b>
	2,2 ÷ 3	M36 (18x2,5x50x8)		3,2 ÷ 4,2	M56 (3x35x33,5x3,5)		1,4 ÷ 2,6	M32 (2x17x29x6)		M34 (1,8x18,4x45x8,5)	<b>833</b>
<b>DN 80 IRQ5...O</b>	0,8 ÷ 1,5	M35 (2x17x54x9)		0,9 ÷ 2	M55 (2,5x35x27x2,25)		0,45 ÷ 0,75	M43 (1,2x15x40x5)		M20 (2,2x29x47x6,5)	<b>831</b>
	1,5 ÷ 2,5	M36 (18x2,5x50x8)		2,2 ÷ 3,3	ME (3x35x30x3,5)		1 ÷ 1,7	M43 (1,2x15x40x5)		M20 (2,2x29x47x6,5)	<b>832</b>
	2,2 ÷ 3	M36 (18x2,5x50x8)		3,2 ÷ 4,2	M56 (3x35x33,5x3,5)		1,4 ÷ 2,6	M32 (2x17x29x6)		M34 (1,8x18,4x45x8,5)	<b>833</b>
<b>DN 100 IRQ5...O</b>	0,8 ÷ 1,5	M35 (2x17x54x9)		0,9 ÷ 2	M55 (2,5x35x27x2,25)		0,45 ÷ 0,75	M43 (1,2x15x40x5)		M20 (2,2x29x47x6,5)	<b>831</b>
	1,5 ÷ 2,5	M36 (18x2,5x50x8)		2,2 ÷ 3,3	ME (3x35x30x3,5)		1 ÷ 1,7	M43 (1,2x15x40x5)		M20 (2,2x29x47x6,5)	<b>832</b>
	2,2 ÷ 3	M36 (18x2,5x50x8)		3,2 ÷ 4,2	M56 (3x35x33,5x3,5)		1,4 ÷ 2,6	M32 (2x17x29x6)		M34 (1,8x18,4x45x8,5)	<b>833</b>

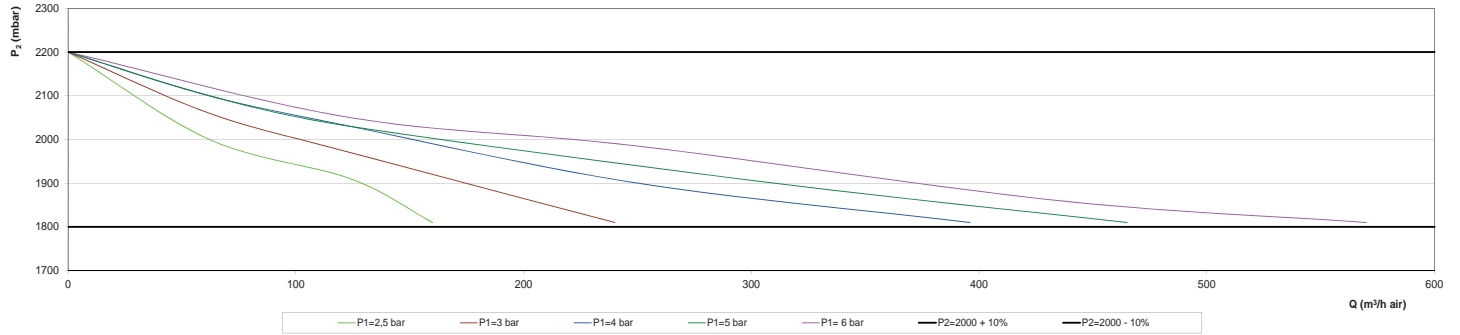
# STABILIZATION DATA

## STABILIZATION DATA DN 25

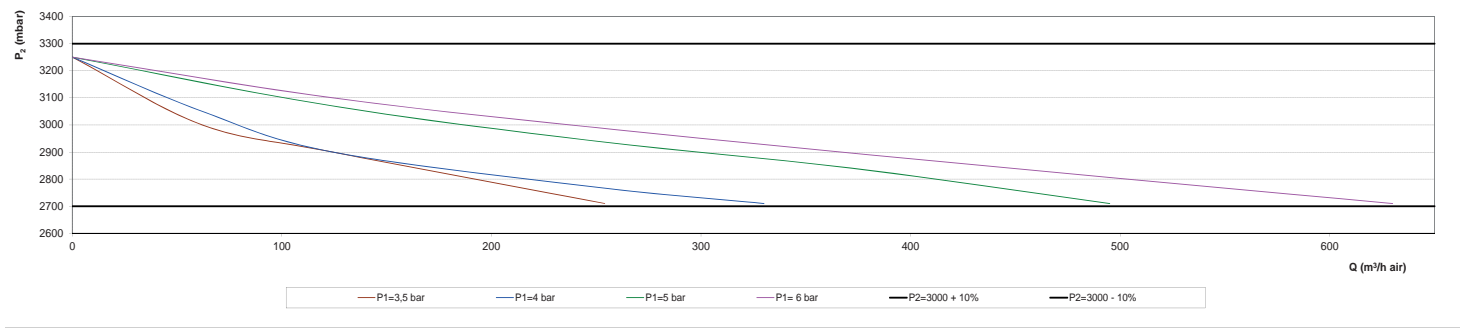
$P_2 = 1000 \text{ mbar}$



$P_2 = 2000 \text{ mbar}$



$P_2 = 3000 \text{ mbar}$



P1 (bar)	P2 (mbar)		
	1000	2000	3000
1,5	110	-	-
2	160	-	-
2,5	190	160	-
3	220	240	-
3,5	265	330	254
4	303	396	328
5	360	465	495
6	415	570	630

# STABILIZATION DATA

## STABILIZATION DATA      DN 32 ÷ DN 50


DN 32					
P1 (bar)	P2 bar				
	1	1,5	2	2,5	3
1,5	355	-	-	-	-
2	600	480	-	-	-
2,5	/	630	533	-	-
3	900	818	718	580	-
3,5	/	/	/	/	663
4	1175	1128	1055	954	818
5	1450	1426	1370	1140	1140
6	1720	1698	1636	1550	1525

DN 40					
P1 (bar)	P2 bar				
	1	1,5	2	2,5	3
1,5	372	-	-	-	-
2	632	452	-	-	-
2,5	/	657	558	-	-
3	915	855	744	595	-
3,5	/	/	/	/	665
4	1215	1150	1070	973	830
5	1485	1438	1385	1178	1165
6	1770	1735	1685	1585	1537

DN 50					
P1 (bar)	P2 bar				
	1	1,5	2	2,5	3
1,5	395	-	-	-	-
2	655	483	-	-	-
2,5	/	682	558	-	-
3	970	843	756	605	-
3,5	/	/	/	/	682
4	1240	1175	1116	1010	855
5	1525	1488	1400	1300	1240
6	1785	1745	1710	1612	1562

DN 50 WITH DN 80 TUBE					
P1 (bar)	P2 bar				
	1	1,5	2	2,5	3
1,5	434	-	-	-	-
2	682	533	-	-	-
2,5	/	693	558	-	-
3	978	843	756	620	-
3,5	/	/	/	/	682
4	1240	1175	1116	1035	868
5	1525	1488	1660	1335	1240
6	1795	1760	1723	1674	1585

## STABILIZATION DATA      DN 65 ÷ DN 100

	P1 (bar)	DN 65			DN 80			DN 100		
		P2 (mbar)			P2 (mbar)			P2 (mbar)		
		1000	2000	3000	1000	2000	3000	1000	2000	3000
	1	-	-	-	-	-	-	-	-	-
2	2200	-	-	2800	-	-	3100	-	-	
3	3150	2800	-	4000	3600	-	4234	3800	-	
4	4000	4100	3300	4900	4800	4200	5250	5185	4300	
5	4800	4800	4800	5000	5000	5680	5300	5400	6000	



## INSTALLATION

The regulator is in conformity with the Directive 2014/34/EU as device of group II, category 2G and as device of group II, category 2D; for this reason it is suitable to be installed in the zones 1 and 21 (besides in the zones 2 and 22) as classified in the attachment I to the Directive 99/92/EC.

The regulator is not suitable to be used in zones 0 and 20 as classified in the already said Directive 99/92/EC.

To determine the qualification and the extension of the dangerous zones, see the norm CEI EN 60079-10-1.

The device, if installed and serviced respecting all the conditions and the technical instructions of this document, is not source of specific dangers: in particular, during the normal working, is forecast, by the regulator, the emission in the atmosphere of inflammable substance only occasionally.

The regulator can be dangerous as regards to the presence close to it of other devices when the integrated relief valve vents or in case of damage of the working diaphragm (24). Only in this last case the regulator is a source of emission of the continue degree explosive atmosphere and, so, it can originate dangerous areas 0 as defined in the 99/92/EC Directive.

In conditions of particularly critic installation (places not protected, lack of servicing, lacking availability of ventilation) and, especially in presence, close to the regulator, of potential sources of primer and/or dangerous devices during the normal working because susceptible to origine electric arcs or sparks, it is necessary to value before the compatibility between the regulator and these devices.

In any case it is necessary to take any useful precaution to avoid that the regulator could be origin of areas 0: for example yearly periodical inspection of regular working, possibility to change the emission degree of the source or to attend on the exhaust outside the explosive material canalizing outside, for example, the relief valve discharge.



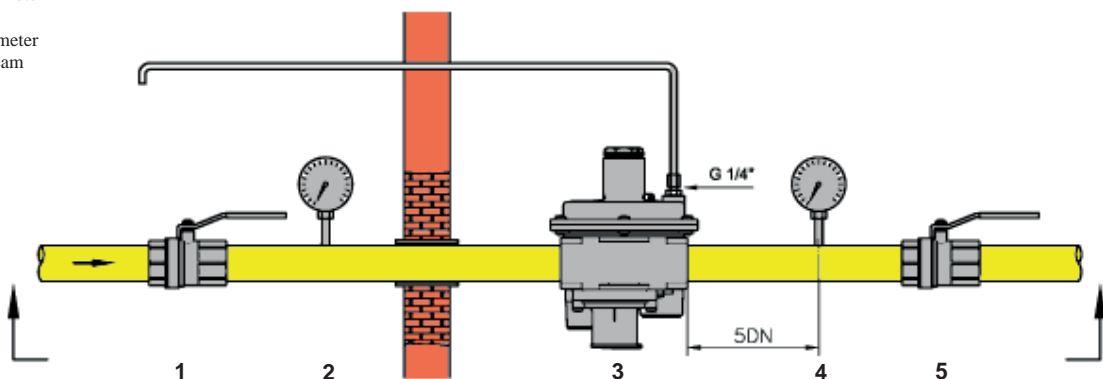
**Installation must be in compliance with local law in force!**

**WARNING: Read carefully the instruction sheet of each product before installing.  
Installation and maintenance must be carried out by qualified personnel.**

- The gas supply must be shut-off before installation.
- Check that the line pressure **DOES NOT EXCEED** the maximum pressure stated on the product label.
- The regulator is normally installed before the user. It must be installed with the arrow on the body (6) towards the user.
- It can be installed in any position but it is preferable the installation with the spring in vertical position. Outside the regulator and downstream of it there is a checking pressure-tap (23) for the control of the regulation pressure.
- Canalize outside the relief valve discharge. Please see installation examples.
- If the device is threaded check that the pipeline thread is not too long; overlong threads may damage the body of the device when screwed into place.
- If the device is flanged check that the inlet and outlet counterflanges are perfectly parallel to avoid unnecessary mechanical stresses on the body of the device.  
Also calculate the space needed to fit the seal. If the gap left after the seal is fitted is too wide, do not try to close it by over-tightening the device's bolts.
- During installation take care not to allow debris or scraps of metal to enter the device.
- Always check that the system is gas-tight after installation.

### EXAMPLE OF INSTALLATION

1. ball valve downstream
2. high pressure manometer
3. regulator IR5...O
4. low pressure manometer
5. ball valve downstream



## MANUAL RESET (versions IR...O)

### DN 15÷50

1. Close the tap or ball valve downstream the regulator.
2. Unscrew the cap (10)
3. Push slightly the reset pin (18), wait few moments to get pressures balancing and then push till the end the reset pin (18).
4. Keeping pushed the reset pin (18), open slowly the tap downstream the regulator.
5. Release the reset pin (18).
6. Subsequently rescrew the cap (10) back to the original position.

### DN 65÷100

In order to reset the shut-off device, you need to follow the instructions:

1. Close ball valve downstream of the regulator.
2. Close the shut-off tap (10)
3. Push the by-pass button (see picture).and keep pushed till balancingthe pressures.
4. If it is not possible to do it, it means the pressures balance still not on; in this case do not force on the pin (18) in order to avoid to damage the reset mechanism. It is necessary to keep pushed the button till completing pressures balance.
5. Release the reset pin (18)
6. Subsequently rescrew the cap (10) back to the original position.



## SETTING

Generally the devices are presetted according customer specifications, in case it is needed to make the setting, with the plant under flow, it is needed:

### MATERIAL NEEDED FOR REGULATOR SETTING:

- N° 1 hexagonal 13 mm spanner for P2 setting (DN 15÷25);
- N° 1 8 mm. wrench (Ø ext. max not higher than 12 mm) for relief setting (DN 15÷25);
- N° 1 flat screwdriver for P2 and relief setting (DN 32÷50);
- N° 1 pressure gauge to check the pressure downstream the regulator.

### HOW TO OPERATE:

- Unscrew the caps (10) and (27).
- To modify the P2 setting value act on the setting screw (1).
- Screw till the end the setting screws (16 e 26) and place to the minimum the setting screw, unscrewing it (17).
- To modify the UPSO tripping setting value act with the key supplied (28) on the setting screw (17).
- To modify the OPSO tripping setting value act with the key supplied (28) on the setting screw (16).
- To modify the RELIEF tripping setting value act with a 8 mm wrench (DN 15÷ 25) or with a flat screwdriver (DN 32 ÷ 50) (not supplied) on the setting screw (26).

## REGULATOR SETTING EXAMPLE

**Regluator pressure needed P2= 2 bar**

**UPS0 tripping value = 0,7 bar**

**OPSO tripping value = 3 bar**

**relief tripping valve = 2,5 bar**

- Unscrew the capr (10) and (27).
- Screw till the end the setting screws (16 and 26) and place to the minimum the setting screw, unscrewing it (17).
- Reset the shut off device following reading the instructions stated from point i to 5 of the paragraph “MANUAL RESET”.
- Unscrewing the setting screw (1), move the pressure P2 to 0,7 bar reading it on the pressure gauge.
- Screw the setting screw (17) till the minimum shut off tripping (UPS0) which at this point is setted to 0,7 bar.
- Make 2-3 crackdowns of the P2 setting screw (1)
- Reset the shut off device reading the instructions stated from pint 1 to 5 of the paragraph “MANUAL RESET”.
- Increase the P2 value acting on the setting screw (1) reading on the pressure gauge till the desired OPSO setting value (in this case arrive up to 3 bar).
- At the same time unscrew slowly the setting screw (16) till OPSO tripping. Make ¼ crackdown to the screw (16). Now the OPSO is set to 3 bar.
- Reset the shut off device reading the instructions stated from point 1 to 5 of the paragraph “MANUAL RESET”.
- Close slowly the tap downstream the regulator
- Increase the P2 value acting on the setting screw (1) reading it on the pressure gauge, till reaching the desired relief setting value (arrive in this case to 2,5 bar).
- Unscrew slowly the setting screw (26) till the P2 pressure, displayed on the pressure gauge, start to decrease.
- The relief is in this case setted to 2,5 bar.
- Remove the wrench and take the P2 acting on the screw (1) to the desired value.
- Reclose the caps (10) and (27).



**All operations must be carried out only by qualified personnel.**

FOR FURTHER INFORMATION PLEASE CONTACT OUR TECHNICAL OFFICE.