

Syntesi® pressure regulator is based on the rolling diaphragm principle, which offers numerous advantages compared to systems using a flat diaphragm:

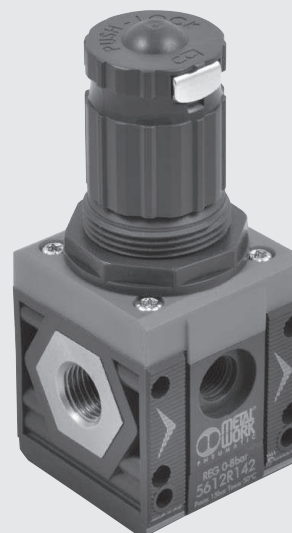
- Increased stroke, allowing wider valve aperture and hence greater flow rate.
- Decreased dynamic and pick-up friction, and hence quicker response and enhanced sensitivity.
- Greater accuracy in maintaining the pressure setting, both with both variable flow rates and different supply pressures.

The regulator includes a compensation system that keeps the pressure setting virtually constant, even when the upstream pressure changes. This is achieved mainly by the design of the valve, which is pneumatically balanced.

If the downstream pressure rises above the threshold value, the air is discharged (relief valve) until it drops below the maximum value.

A special device relieves downstream pressure rapidly when the upstream pressure drops to zero. This means the regulator can be positioned between a valve and a cylinder because the air can flow in both directions, towards the cylinder with regulated pressure, or return towards the valve during relief.

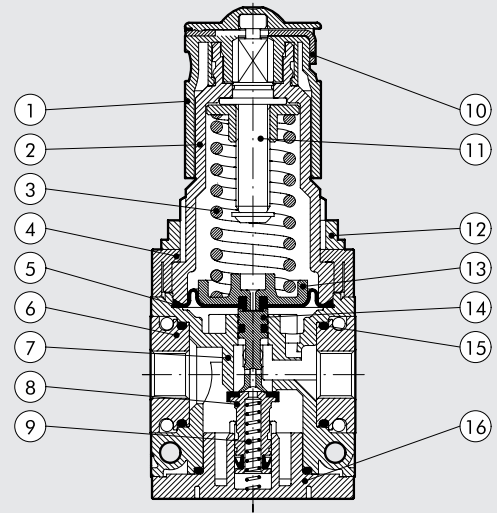
The knob is the push-lock type – once the pressure has been set, press it and it locks in position. In this position you can pull out the plate and attach two padlocks on size 1 or three padlocks on size 2 in order to avoid possible tampering. On the front and back there is a port (1/8" for size 1 and 1/4" size 2) that can be used with pressure gauges, pressure switches or as an additional regulated air intake.



TECHNICAL DATA	REG SY1			REG SY2			
	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
Threaded port							
Max. inlet pressure							
	bar	15			13		
	MPa	1.5			1.3		
	psi	217			188		
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 0.5 bar (0.5 MPa; 7 psi)	Nl/min	570	1600	2900	3000	4300	4700
(inlet pressure 10 bar)	scfm	20	57	103	106	152	166
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14 psi)	Nl/min	1200	2800	3350	5300	7400	7600
(inlet pressure 10 bar)	scfm	42	99	119	188	261	267
Relief valve flow rate at 6.3 bar (0.63 MPa; 91 psi)	Nl/min	70				100	
	scfm	2.5				3.5	
Min/max temperature at 10 bar; 1 MPa; 145 psi	°C	From -10 to +50			From -10 to +50		
Full outflow with zero inlet pressure		Included					
Padlockable knob		Included					
Upstream pressure compensation		Included, via balanced valve					
Weight	g	193	188	179	546	519	515 503
Fluid		Compressed air or other inert gases					
Mounting position		In any position					
Additional air take-off, for pressure gauges or fittings		1/8", front and rear			1/4", front and rear		
Additional air take-off flow rate at 6.3 bar	Nl/min	500			1400		
(0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14 psi)	scfm	18			50		
Wall fixing screws		No. 2 M4 screws			No. 2 M5 screws		
Notes on use		The pressure must always be set upwards. For increased sensitivity, use a pressure regulator with a rated pressure as close as possible to the required value. On request version without overpressure exhaust					

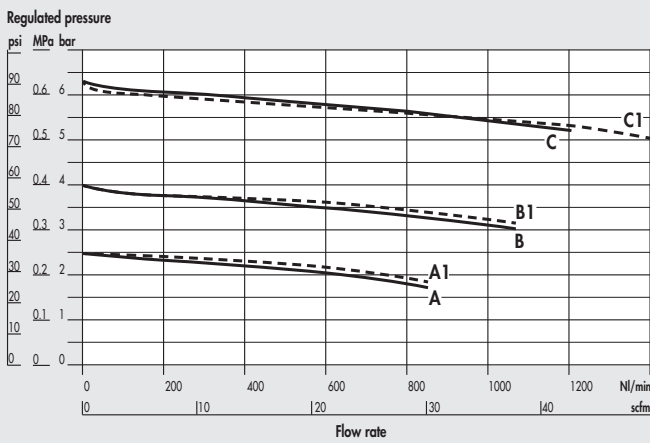
COMPONENTS

- ① Technopolymer adjusting knob
- ② Technopolymer bell
- ③ Steel adjusting spring (with Geomet® treatment for anti-corrosion version)
- ④ Technopolymer flange
- ⑤ Rolling diaphragm
- ⑥ IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium for 3/4" - 1"
- ⑦ Technopolymer regulator body
- ⑧ OT58 brass valve, with NBR vulcanized gasket
- ⑨ Stainless steel valve spring
- ⑩ Galvanised steel plate for knob locking (stainless steel for anti-corrosion version)
- ⑪ OT58 brass adjusting screw
- ⑫ Technopolymer ring nut
- ⑬ Technopolymer plate
- ⑭ Technopolymer rod
- ⑮ NBR o-ring gasket
- ⑯ Technopolymer plug

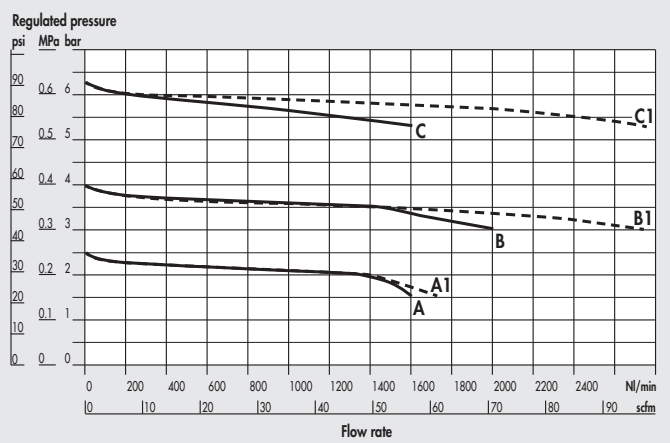


FLOW CHARTS

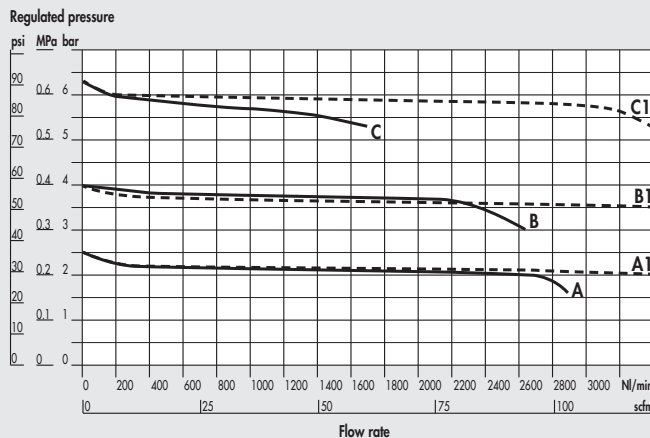
REG Syntesi® SY1 1/8"



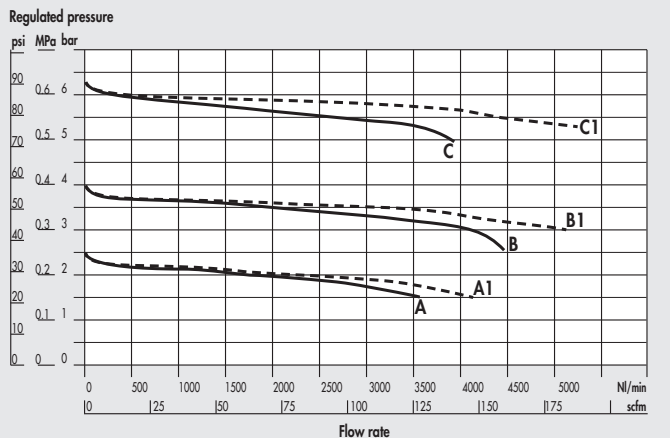
REG Syntesi® SY1 1/4"



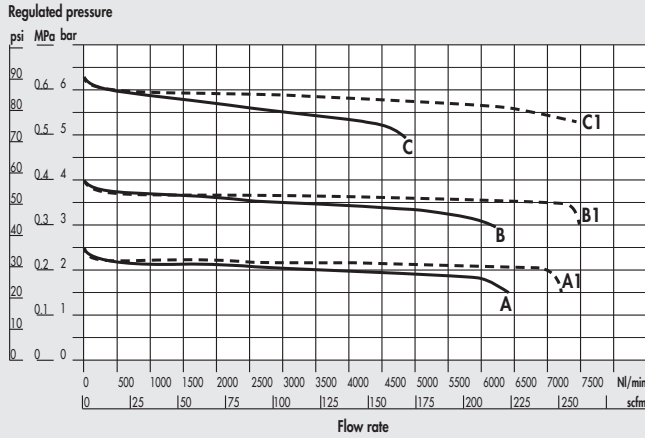
REG Syntesi® SY1 3/8"



REG Syntesi® SY2 3/8"



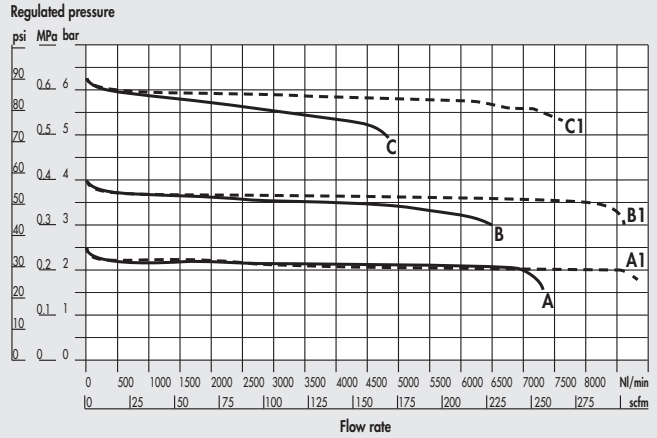
REG Syntesi® SY2 1/2"



A = P In 7 bar - P Out 2.5 bar
B = P In 7 bar - P Out 4 bar

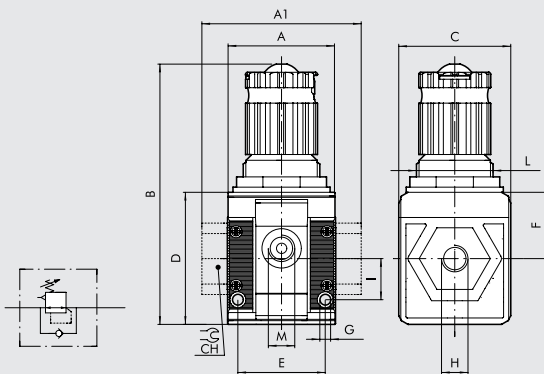
C = P In 7 bar - P Out 6.3 bar
A1 = P In 10 bar - P Out 2.5 bar

REG Syntesi® SY2 3/4" - 1"



B1 = P In 10 bar - P Out 4 bar
C1 = P In 10 bar - P Out 6.3 bar

DIMENSIONS



	SIZE 1			SIZE 2			
H (threaded port)	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
A	42			61			
A1	-	102	44	-	-	95	95
B	102			142			
C	44			61			
CH	-			-	-	32	36
D	51.5			70.5			
E	33.5			47.5			
F	25.8			38.2			
G	Hole for M4 screws			Hole for M5 screws			
I	16			22.5			
L	M30x1.5			M38x2			
M (pressure gauge port or air takes-off)	1/8"			1/4"			

KEY TO CODES

56	1	1	R	14	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	SETTING RANGE	THREADED OUTPUT CONNECTION
56 Syntesi 5X Syntesi anti-corrosion	1 Size 1 2 Size 2	0 Without bushing 1 1/8" port 2 1/4" port 3 3/8" port 0 Without bushing 3 3/8" port 4 1/2" port 5 3/4" port 6 1" port	R Pressure regulator	● 10 0 ÷ 2 bar ● 12 0 ÷ 4 bar 14 0 ÷ 8 bar 16 0 ÷ 12 bar	0 Without bushing 1 1/8" port 2 1/4" port 3 3/8" port 0 Without bushing 3 3/8" port 4 1/2" port 5 3/4" port 6 1" port

● Not available in the anti-corrosion version.

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

Code	Description	Code	Description	Code	Description
Syntesi® SY1 REGULATOR		Syntesi® SY2 REGULATOR		Syntesi® SY2 REGULATOR	
5610R140	REG SY1 08 without bushings	5620R140	REG SY2 08 without bushings	5626R146	REG SY2 1 08
5610R160	REG SY1 012 without bushings	5620R160	REG SY2 012 without bushings	5626R166	REG SY2 1 012
5611R141	REG SY1 1/8 08	5623R143	REG SY2 3/8 08		
5611R161	REG SY1 1/8 012	5623R163	REG SY2 3/8 012		
5612R142	REG SY1 1/4 08	5624R144	REG SY2 1/2 08		
5612R162	REG SY1 1/4 012	5624R164	REG SY2 1/2 012		
5613R143	REG SY1 3/8 08	5625R145	REG SY2 3/4 08		
5613R163	REG SY1 3/8 012	5625R165	REG SY2 3/4 012		
				NOTE	
				Anti-corrosion version	
				5X	
				Example	
				5X11R141	REG SY1 1/8 08 anti-corrosion