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

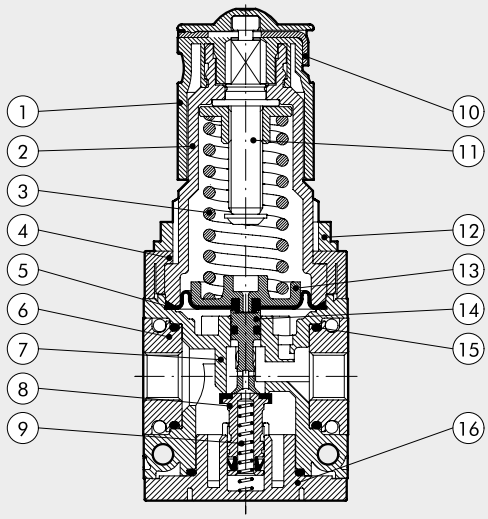
- Increased stroke, allowing wider valve aperture and hence greater flow rate.
- Decreased dynamic and pick-up friction, and hence quicker response and enhanced sensitivity.
- Greater accuracy in maintaining the pressure setting, both with both variable flow rates and different supply pressures.

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" BSPP for size 1 and 1/4" BSPP size 2) that can be used with pressure gauges, pressure switches or as an additional regulated air intake.

TECHNICAL DATA		REG SY1			REG SY2			
Threaded port		1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
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 (0.05 MPa; 7.25 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; 14.5 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			
	°F	From 14 to +122			From 14 to +122			
Full outflow with zero inlet pressure		Included						
Padlockable knob		Included						
Upstream pressure compensation		Included, via balanced valve						
Weight	pounds	0.43	0.42	0.40	1.2	1.14	1.13	1.11
Fluid		Compressed air or other inert gases						
Mounting position		In any position						
Additional air take-off, for pressure gauges or fittings		1/8" BSPP, front and rear			1/4" BSPP, 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; 14.5 psi)	scfm	18			50			
Wall fixing screws		N. 8-32 unc x 2			N. 10-24 unc x 2			
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 exaust						

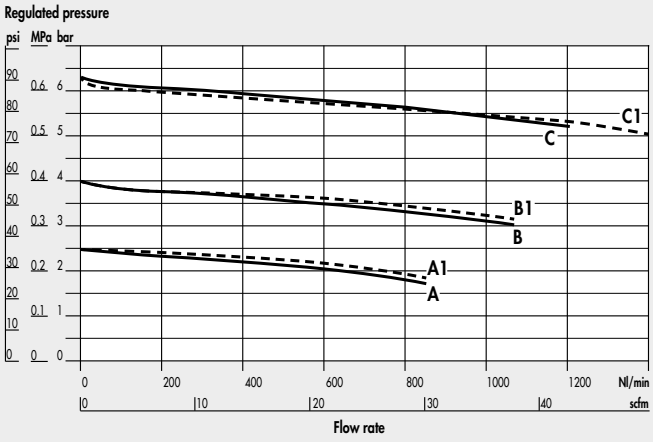
COMPONENTS

① Technopolymer adjusting knob
② Technopolymer bell
③ Steel adjusting spring
④ Technopolymer flange
⑤ Rolling diaphragm
⑥ IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium
⑦ Technopolymer regulator body
⑧ OT58 brass valve, with NBR vulcanized gasket
⑨ Stainless steel valve spring
⑩ 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

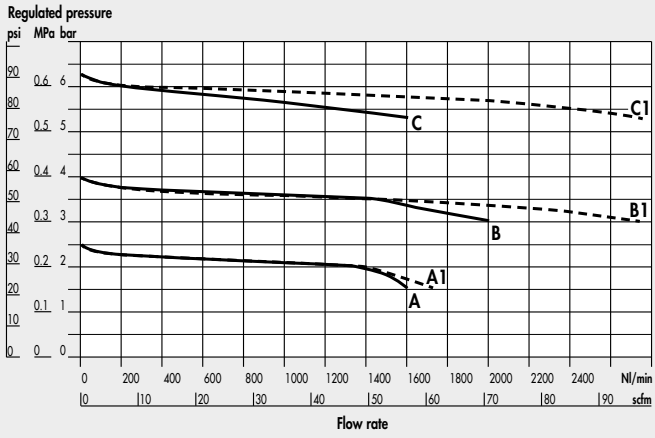


FLOW CHARTS

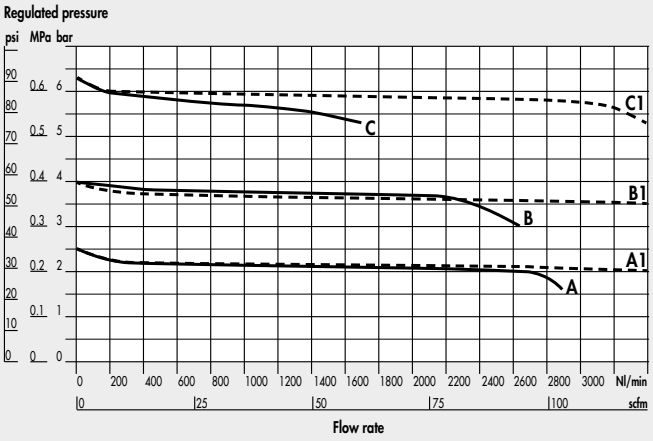
REG Syntesi® **SY1** 1/8"



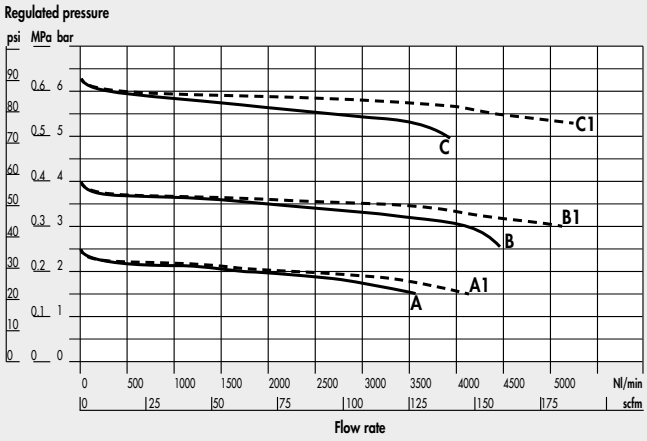
REG Syntesi® **SY1** 1/4"



REG Syntesi® **SY1** 3/8"



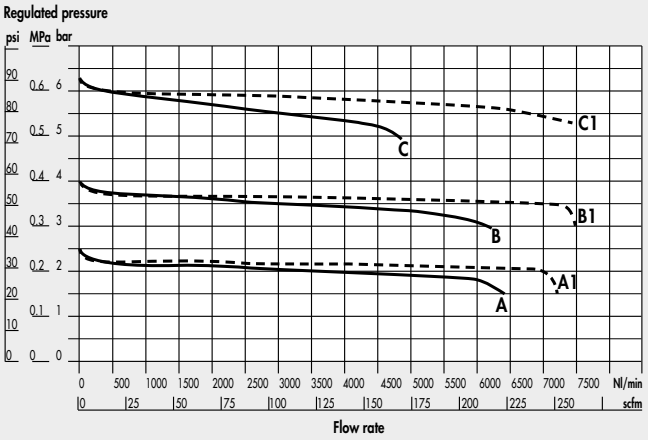
REG Syntesi® **SY2** 3/8"



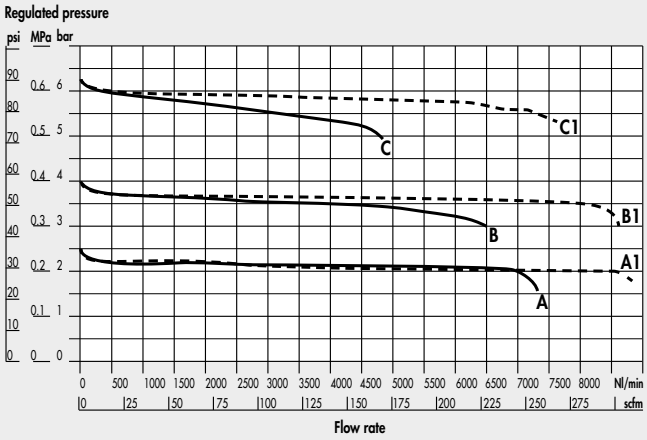
A = P In 7 bar (101.5 psi) - P Out 2.5 bar (36 psi)
B = P In 7 bar (101.5 psi) - P Out 4 bar (58 psi)
C = P In 7 bar (101.5 psi) - P Out 6.3 bar (91 psi)

A1 = P In 10 bar (145 psi) - P Out 2.5 bar (36 psi)
B1 = P In 10 bar (145 psi) - P Out 4 bar (58 psi)
C1 = P In 10 bar (145 psi) - P Out 6.3 bar (91 psi)

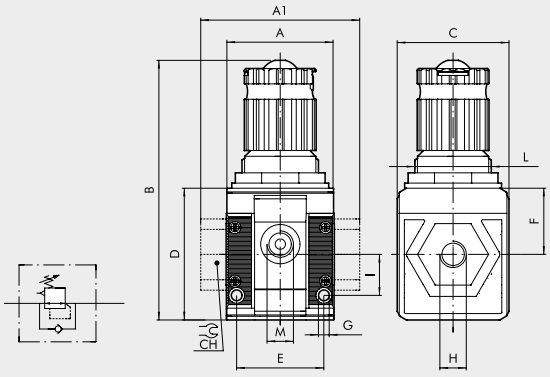
REG Syntesi® **SY2** 1/2″



REG Syntesi® **SY2** 3/4″ - 1″



DIMENSIONS



	SIZE 1			SIZE 2			
H (threaded port) NPT	1/8″	1/4″	3/8″	3/8″	1/2″	3/4″	1″
A	1.65			2.38			
A1	-	-	1.73	-	-	3.74	3.74
B	4.02			5.59			
C	1.73			2.4			
CH	-			-	-	1.26	1.41
D	2.03			2.77			
E	1.32			1.87			
F	1.02			1.5			
G	0.165			0.21			
I	0.63			0.89			
L	M30x1.5			M38x2			
M (pressure gauge port or air takes-off)	1/8″ BSPP			1/4″ BSPP			

KEY TO CODES

5U	1	1	R	14	1
SYNTESI	**SIZE**	**THREADED INPUT CONNECTION**	**ELEMENT**	**SETTING RANGE**	**THREADED OUTPUT CONNECTION**
5U Syntesi NPT	**1** Size 1	**0** Without bushing	**R** Pressure regulator	● **10** 0 - 30 psi	**0** Without bushing
5Z Syntesi anti-corrosion NPT		**1** 1/8″ NPT port		✚ **12** 0 - 60 psi	**1** 1/8″ NPT port
		2 1/4″ NPT port		**14** 0 - 120 psi	**2** 1/4″ NPT port
		3 3/8″ NPT port		**16** 0 - 180 psi	**3** 3/8″ NPT port
	2 Size 2	**0** Without bushing			**0** Without bushing
		3 3/8″ NPT port			**3** 3/8″ NPT port
		4 1/2″ NPT port			**4** 1/2″ NPT port
		5 3/4″ NPT port			**5** 3/4″ NPT port
		6 1″ NPT port			**6** 1″ NPT port

● Not available in the anti-corrosion version. ✚ Anti-corrosion version available only in size 1.

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
Syntesi® SY1 REGULATOR	
5U10R140	REG SY1 0-120 NPT without bushings
5U10R160	REG SY1 0-180 NPT without bushings
5U11R141	REG SY1 1/8 0-120 NPT
5U11R161	REG SY1 1/8 0-180 NPT
5U12R142	REG SY1 1/4 0-120 NPT
5U12R162	REG SY1 1/4 0-180 NPT
5U13R143	REG SY1 3/8 0-120 NPT
5U13R163	REG SY1 3/8 0-180 NPT

Code	Description
Syntesi® SY2 REGULATOR	
5U20R140	REG SY2 0-120 NPT without bushings
5U20R160	REG SY2 0-180 NPT without bushings
5U23R143	REG SY2 3/8 0-120 NPT
5U23R163	REG SY2 3/8 0-180 NPT
5U24R144	REG SY2 1/2 0-120 NPT
5U24R164	REG SY2 1/2 0-180 NPT
5U25R145	REG SY2 3/4 0-120 NPT
5U25R165	REG SY2 3/4 0-180 NPT

Code	Description
Syntesi® SY2 REGULATOR	
5U26R146	REG SY2 1 0-120 NPT
5U26R166	REG SY2 1 0-180 NPT

NOTE
Anti-corrosion version
5Z_ _ _ _ _ _
Example
5Z11R141 REG SY1 1/8 08 NPT anti-corrosion