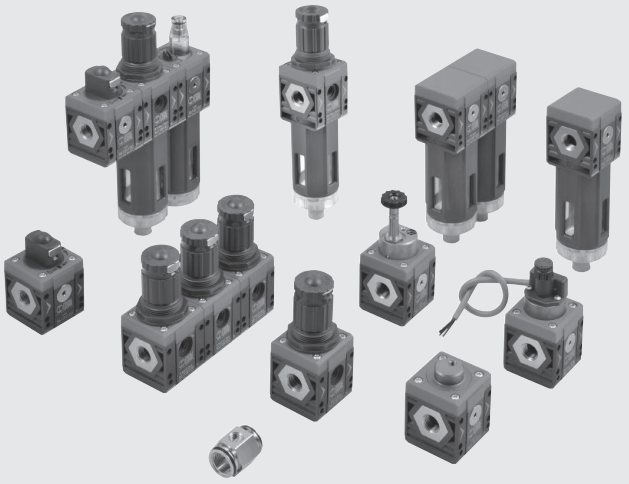
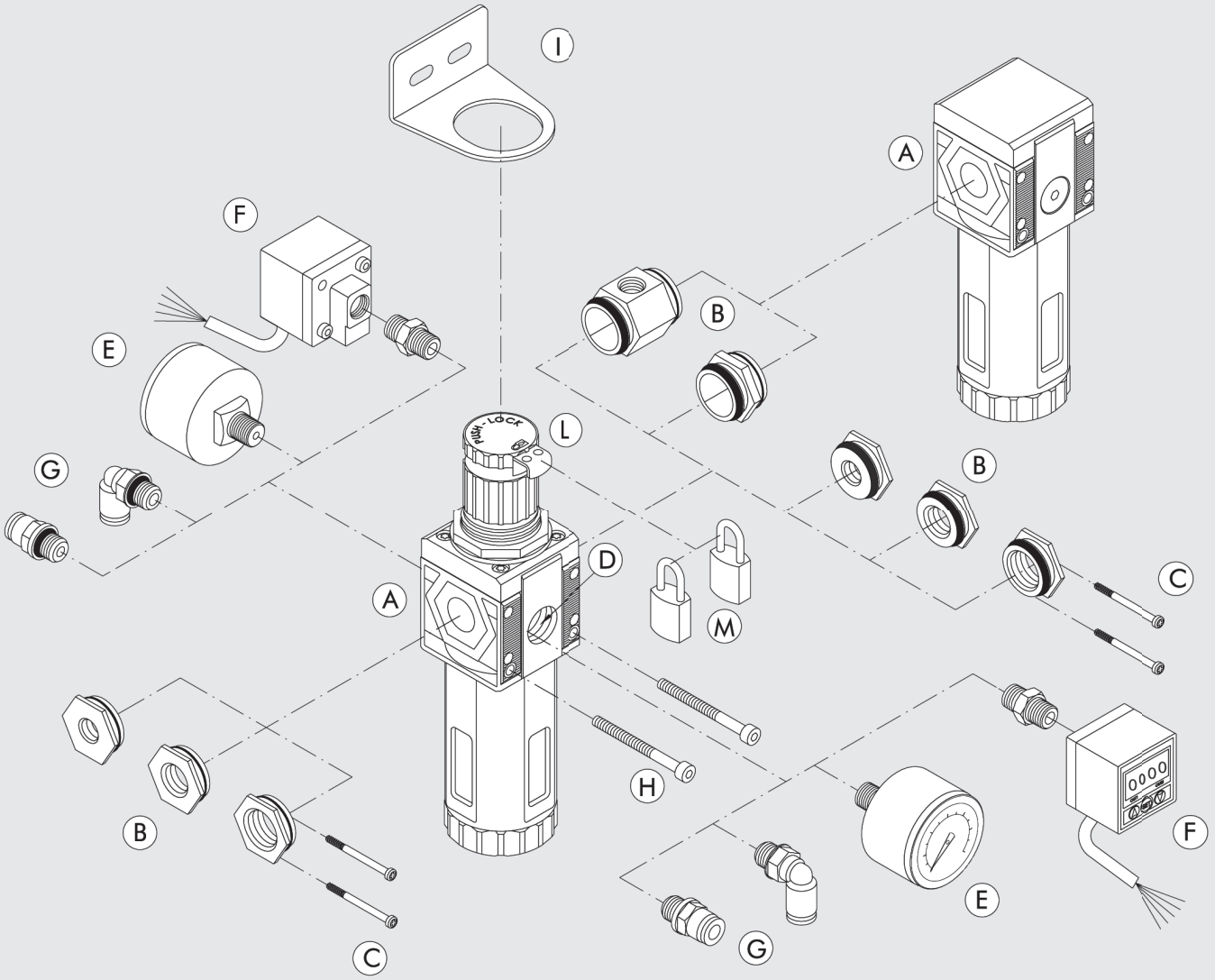
Syntesi® is an important milestone achieved by Metal Work, the result of thirty years' experience producing air-treatment units. It has been studied in minute detail to obtain the best possible performance in a reduced space and with limited weight. The capacity is much higher than that of other units of the same size.
This modular unit features a very simple yet effective system that requires no brackets, stay bolts or yoke for assembling the elements. The basic version of Syntesi® incorporates numerous functions that are not provided or are only optional with traditional units. Examples are padlockable knobs, additional pneumatic ports on the front and back, flow options from left to right or vice versa, regulators with compensation system - which are accurate even when the upstream pressure changes, with rapid downstream pressure relief - full indelible marking, automatic condensate drain even in size 1, and 360° visual inspection of oil and condensate levels.



TECHNICAL DATA		SIZE 1			SIZE 2			
Threaded port		1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Max. input pressure	bar	15			13			
	MPa	1.5			1.3			
	psi	217			188			
Flow rate		See catalogue of the various elements						
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			
Padlockable knob		The knobs of the regulators, filter regulators and standard sectioning valves can all be padlocked						
Fluid		Compressed air or other inert gases						
Mounting position		See catalogue of the various elements						
Direction of flow		Flow options right to left or vice versa						
Additional air take-off, for pressure gauges or fittings		1/8" BSPP, front and rear, on all modules			1/4" BSPP, front and rear, on all modules			
Wall fixing screws		N. 8-32 unc x 2			N. 10-24 unc x 2			
Certification for potentially explosive atmosphere according to 94/9/CE		Ex II 3 GD c T5 T 100°C -20°C<Ta<50°C						

NOTES

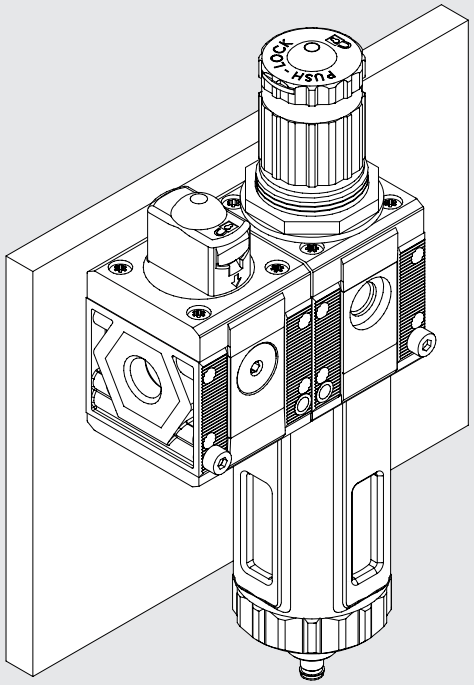
MODULARITY AND FLEXIBILITY



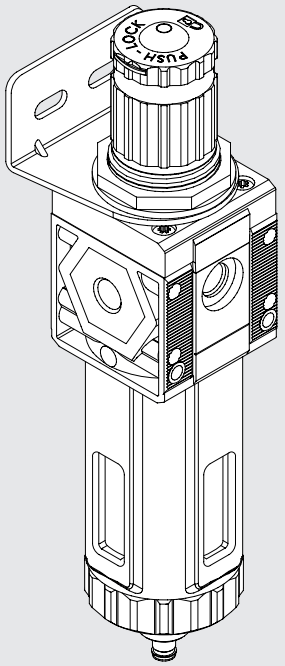
The various elements Ⓐ of Syntesi® can be fixed together and connected to the air feed and delivery circuit using nickel brass or passivated aluminium bushes Ⓑ.
The bushes are easy to remove by unscrewing the two front screws Ⓒ. This solution has numerous advantages:
- Reduced overall dimensions.
- Free composition of multiple elements, without the need for brackets, stay bolts or yoke.
- The metal threads of the fittings, including taper thread, allow high torques.
- Maximum flexibility, a unit can be transformed at any time by adding an element or replacing a port with another one, e.g. 1/4" NPT instead of 1/8" NPT.
- The pneumatic inlet port can be the same or different from the outlet port.

Standard ports Syntesi® are: 1/8" NPT, 1/4" NPT, 3/8" NPT for size 1; 3/8" NPT, 1/2" NPT, 3/4" NPT, 1" NPT for size 2; also an intermediate connection and an air intake are available.
For the insertion of the bushings on the size 2 it could be necessary to push with the assistance of a vice.
Additional ports Ⓓ. On the front and back of all Syntesi® is an (1/8" BSPP for size 1, 1/4" BSPP for size 2) port for use with pressure gauges Ⓔ or pressure switches Ⓕ or, considering the high flow rate, as additional air take-off Ⓖ. These ports are downstream of the element, so, for example, a regulator port can supply air at a set pressure or a filter port can supply filtered air (not valid for actived carbon filter and depurator).
Wall fixing. Only two through screws Ⓗ are needed. No bulky brackets or additional flanges are required.
Regulator fixing bracket. The regulators and filter regulators can be fixed in position using a steel bracket Ⓘ.
Padlockable knob Ⓛ. The knobs on the regulators, filter regulator and sectioning valves can all be padlocked. The steel plate is included in the supply. You can insert up to two Ⓜ padlocks on size 1, and up to three padlocks on size 2.

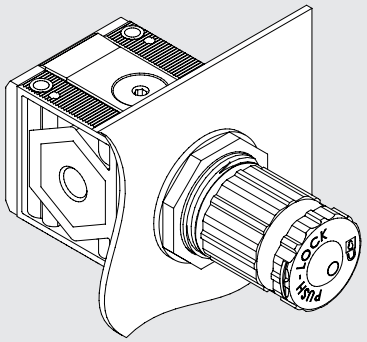
MOUNTING OPTIONS



On the wall, using two screws

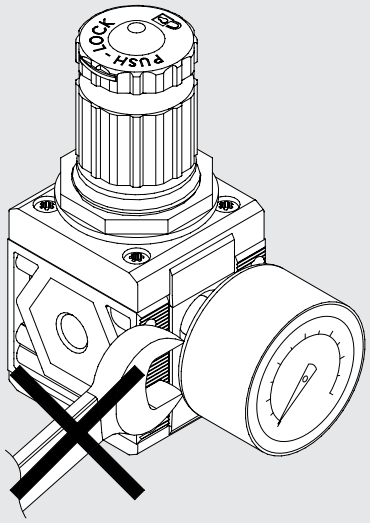


Using a bracket



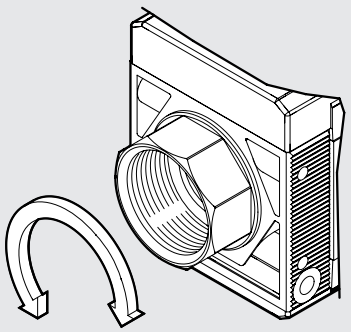
On a panel

FIXING TO FRONT PORTS



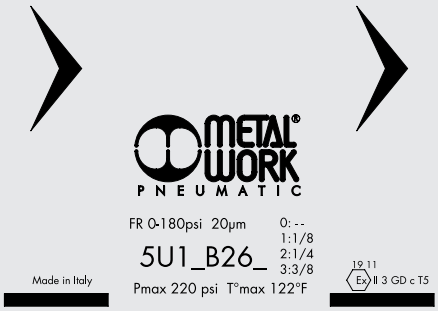
Do not use a spanner for fixing taper threaded elements to the front ports. Mount by hand and apply a liquid sealant (not teflon®).

ROTARY BUSHINGS



3/4" NPT and 1" NPT bushings in Size 2 rotate freely to facilitate assembly operations.

LASER MARKING



The following is marked indelibly on the body:
- Metal Work trademark
- Code
- Maximum pressure and temperature
- Degree of filtration or pressure range, where relevant
- Week and year of manufacture
- Atex category
- Made in Italy

KEY TO CODES SINGLE ELEMENT

5U	1	1	F	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	TYPE	THREADED OUTPUT CONNECTION
5U Syntesi NPT	**1** Size 1	**0** Without bushing **1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port	**F** Filter **D** Depurator **C** Active carbon filter **R** Pressure regulator **B** Filter-regulator **L** Lubricator **V** Shut off valve **A** Progressive starter **S** Pressure switches **P** Air take-off	Varies from element to element	**0** Without bushing **1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port
	2 Size 2	**0** Without bushing **3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port			**0** Without bushing **3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port

KEY TO CODES UNIT COMPOSED OF TWO OR THREE ELEMENTS

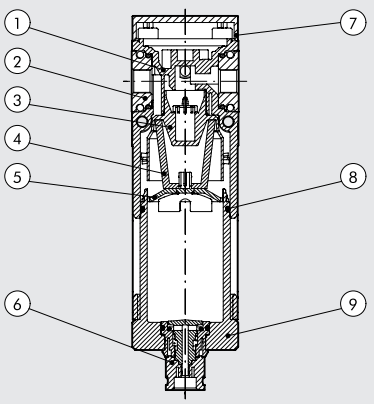
5U	1	1	V	10	B	24	L	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT 1	TYPE	ELEMENT 2	TYPE	ELEMENT 3	TYPE	THREADED OUTPUT CONNECTION
5U Syntesi NPT	**1** Size 1	**1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port	**F** Filter **D** Depurator **C** Active carbon filter **R** Pressure regulator **B** Filter-regulator **L** Lubricator **V** Shut off valve **A** Progressive starter **S** Pressure switches **P** Air Take-off	Varies from element to element	**F** Filter **D** Depurator **C** Active carbon filter **R** Pressure regulator **B** Filter-regulator **L** Lubricator **V** Shut off valve **A** Progressive starter **S** Pressure switches **P** Air Take-off	Varies from element to element	**F** Filter **D** Depurator **C** Active carbon filter **R** Pressure regulator **B** Filter-regulator **L** Lubricator **V** Shut off valve **A** Progressive starter **S** Pressure switches **P** Air Take-off	Varies from element to element	**1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port
	2 Size 2	**3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port							**3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port

The job of the filter is to retain liquid or solid impurities present in the compressed air.
The incoming air is moved by the centrifuge unit, so that liquid particles, which are heavier, are projected against the walls of the container and force to adhere to it. As they accumulate, the create drops that deposit on the bottom by gravity.
The remaining solid particles are held back by the porous filtering element.
The condensate is maintained in a quiet state to prevent the deposited impurities from re-entering the circulation. The condensate drains out through the drain cock provided.
The RMSA drain discharges when the pressure in the filter drops to zero. Alternatively the condensate can be drained by hand by pressing the button.
The RA drain discharges condensate from the container automatically whenever necessary, regardless of the pressure level.
On the front and back there is a port (1/8" BSPP for size 1 and 1/4" BSPP for size 2) that can be used with pressure gauges, pressure switches or as an additional filtered air intake.

TECHNICAL DATA		FIL SY1			FIL SY2			
Threaded port		1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Degree of filtration	µm	yellow: 5 (200 microinch) - output air purity class ISO8573-1: 3.7.4						
		white: 20 (790 microinch) - output air purity class ISO8573-1: 4.7.4						
		blue: 50 (2000 microinch) - output air purity class ISO8573-1: 5.7.4						
Max. input 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	900	1200	1300	3400	3800	3800	
	scfm	32	42	46	120	135	135	
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	1300	1650	1750	4500	5200	5200	
	scfm	46	58	62	159	184	184	
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			
Weight	Pounds	0.40	0.38	0.36	1.08	1.02	1.01	0.98
Condensate drain		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure						
		RA: automatic drain with condensate discharge, independent of pressure and flow rate						
		Note: the maximum input pressure for the RA version must not exceed 145 psi						
Fluid		Compressed air or other inert gases						
Condensate bowl capacity	fluid ounce oz	1.02			2.37			
Mounting position		Vertical			Vertical			
Port for additional air take-off		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			1500			
(0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	scfm	18			53			
Wall fixing screws		N. 8-32 unc x 2			N. 10-24 unc x 2			

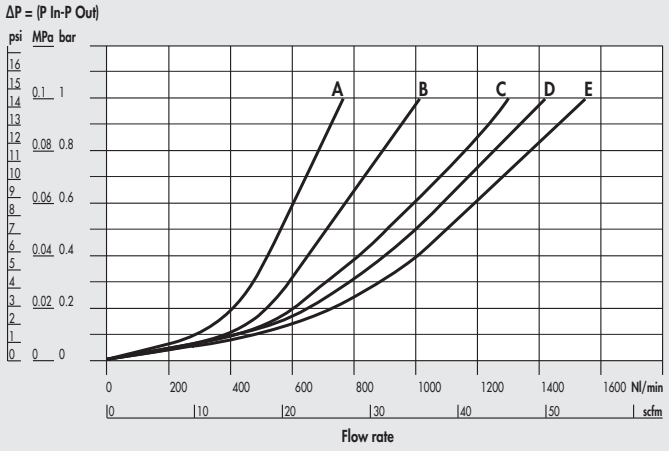
COMPONENTS

① Technopolymer filter body
② IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium
③ Technopolymer centrifuge
④ Sintered HDPE filter cartridge
⑤ Technopolymer screen
⑥ Drain (RMSA)
⑦ Technolpolymer plate
⑧ NBR o-ring gaskets
⑨ Clear technopolymer bowl

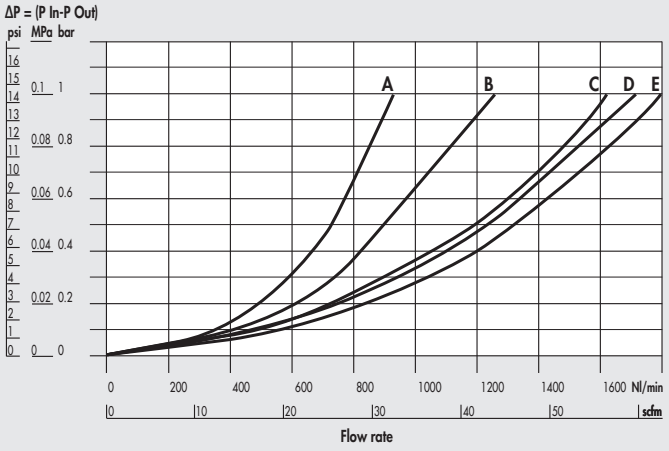


FLOW CHARTS

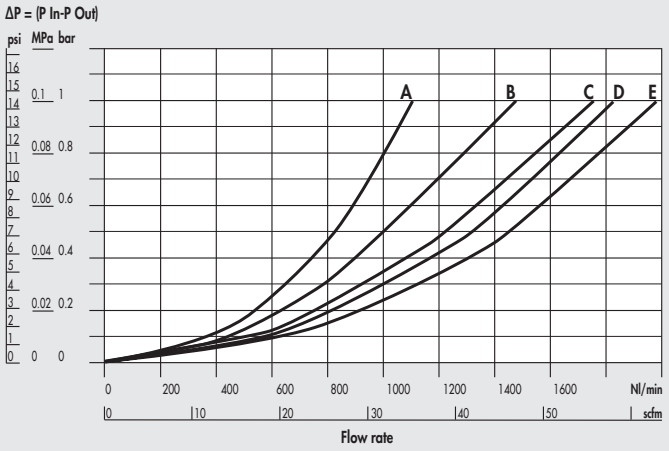
FIL Syntesi® **SY1** 1/8"



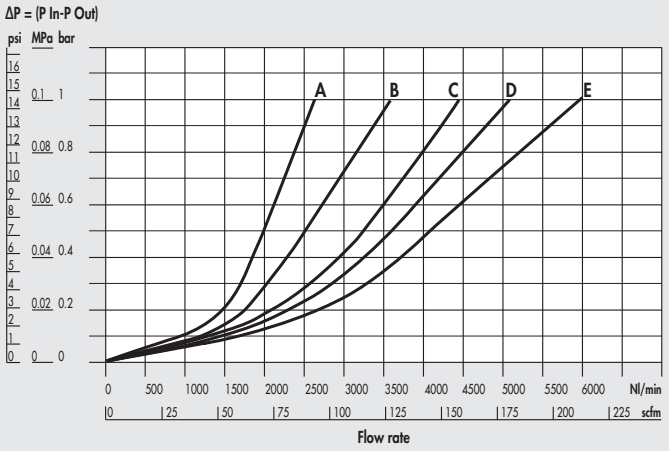
FIL Syntesi® **SY1** 1/4"



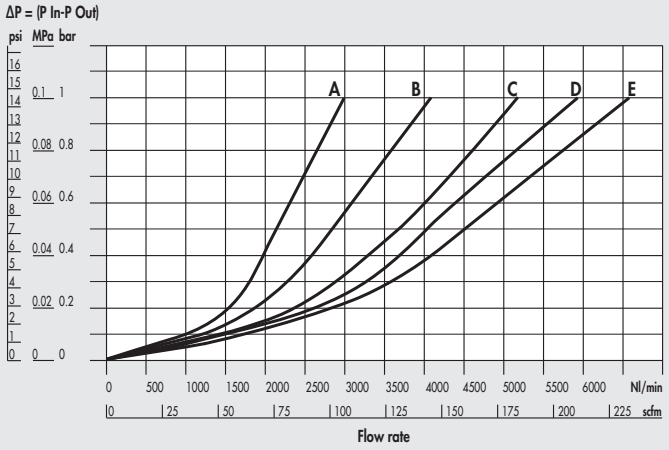
FIL Syntesi® **SY1** 3/8"



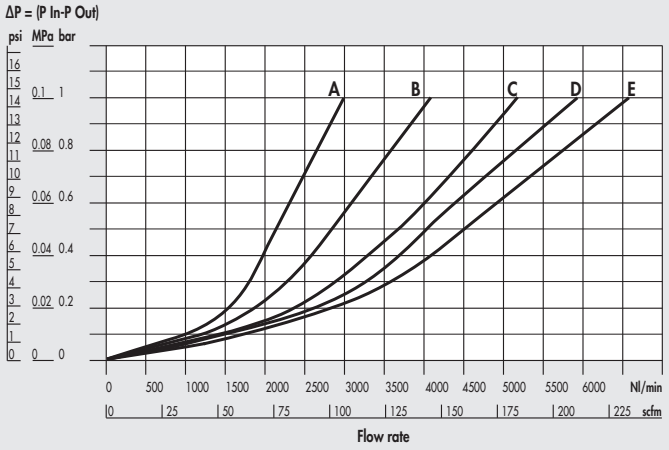
FIL Syntesi® **SY2** 3/8"



FIL Syntesi® **SY2** 1/2"

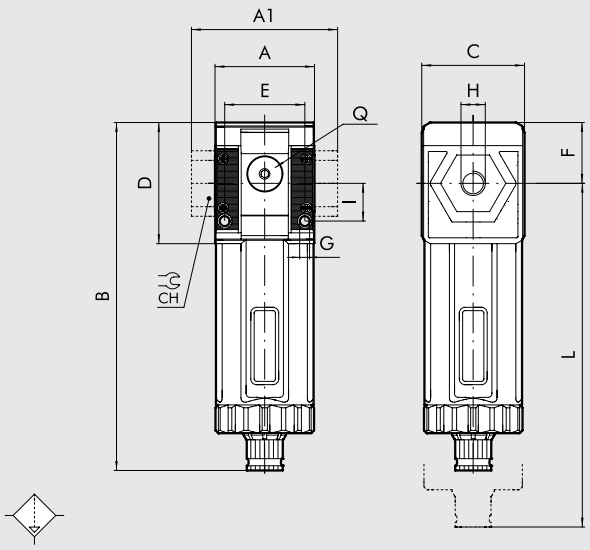


FIL Syntesi® **SY2** 3/4"-1"



A = 2.5 bar - 0.25 MPa - 36 psi
B = 4 bar - 0.4 MPa - 58 psi
C = 6.3 bar - 0.63 MPa - 91 psi
D = 8 bar - 0.8 MPa - 116 psi
E = 10 bar - 1 MPa - 145 psi

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			2.4			
A1		-	-	1.73	-	-	3.74	3.74
B	RMSA	5.83			7			
	RA	5.99			7.16			
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	RMSA	7.95			9.65			
	RA	8.11			9.8			
Q (no. 2 additional air takes-off)		1/8″ BSPP			1/4″ BSPP			

KEY TO CODES

5U	1	1	F	10	1
SYNTESI	**SIZE**	**THREADED INPUT CONNECTION**	**ELEMENT**	**DEGREE OF FILTRATION AND TYPE OF CONDENSATE DRAIN**	**THREADED OUTPUT CONNECTION**
5U Syntesi NPT	**1** Size 1	**0** Without bushing **1** 1/8″ NPT port **2** 1/4″ NPT port **3** 3/8″ NPT port	**F** Filter	**10** 5 µm (200 microinch) RMSA **20** 20 µm (790 microinch) RMSA **30** 50 µm (2000 microinch) RMSA **40** 5 µm (200 microinch) RA **50** 20 µm (790 microinch) RA **60** 50 µm (2000 microinch) RA	**0** Without bushing **1** 1/8″ NPT port **2** 1/4″ NPT port **3** 3/8″ NPT port
	2 Size 2	**0** Without bushing **3** 3/8″ NPT port **4** 1/2″ NPT port **5** 3/4″ NPT port **6** 1″ NPT port			**0** Without bushing **3** 3/8″ NPT port **4** 1/2″ NPT port **5** 3/4″ NPT port **6** 1″ NPT port

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.

RA: automatic drain with condensate discharge, independent of pressure and flow rate.

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.

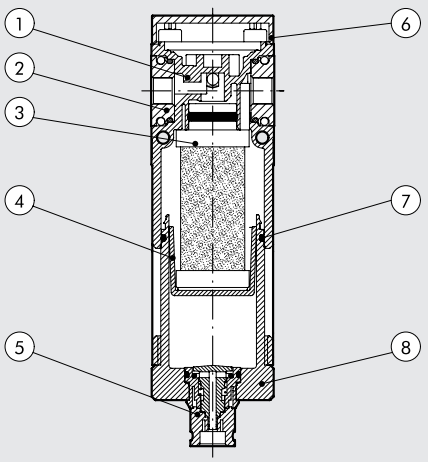
Code	Description	Code	Description	Code	Description
Syntesi® SY1 FILTER		**Syntesi® SY2 FILTER**		**Syntesi® SY2 FILTER**	
5U10F100	FIL SY1 5 RMSA NPT without bushings	**5U20F100**	FIL SY2 5 RMSA NPT without bushings	**5U26F106**	FIL SY2 1 5 RMSA NPT
5U10F200	FIL SY1 20 RMSA NPT without bushings	**5U20F200**	FIL SY2 20 RMSA NPT without bushings	**5U26F206**	FIL SY2 1 20 RMSA NPT
5U10F400	FIL SY1 5 RA NPT without bushings	**5U20F400**	FIL SY2 5 RA NPT without bushings	**5U26F406**	FIL SY2 1 5 RA NPT
5U10F500	FIL SY1 20 RA NPT without bushings	**5U20F500**	FIL SY2 20 RA NPT without bushings	**5U26F506**	FIL SY2 1 20 RA NPT
5U11F101	FIL SY1 1/8 5 RMSA NPT	**5U23F103**	FIL SY2 3/8 5 RMSA NPT		
5U11F201	FIL SY1 1/8 20 RMSA NPT	**5U23F203**	FIL SY2 3/8 20 RMSA NPT		
5U11F401	FIL SY1 1/8 5 RA NPT	**5U23F403**	FIL SY2 3/8 5 RA NPT		
5U11F501	FIL SY1 1/8 20 RA NPT	**5U23F503**	FIL SY2 3/8 20 RA NPT		
5U12F102	FIL SY1 1/4 5 RMSA NPT	**5U24F104**	FIL SY2 1/2 5 RMSA NPT		
5U12F202	FIL SY1 1/4 20 RMSA NPT	**5U24F204**	FIL SY2 1/2 20 RMSA NPT		
5U12F402	FIL SY1 1/4 5 RA NPT	**5U24F404**	FIL SY2 1/2 5 RA NPT		
5U12F502	FIL SY1 1/4 20 RA NPT	**5U24F504**	FIL SY2 1/2 20 RA NPT		
5U13F103	FIL SY1 3/8 5 RMSA NPT	**5U25F105**	FIL SY2 3/4 5 RMSA NPT		
5U13F203	FIL SY1 3/8 20 RMSA NPT	**5U25F205**	FIL SY2 3/4 20 RMSA NPT		
5U13F403	FIL SY1 3/8 5 RA NPT	**5U25F405**	FIL SY2 3/4 5 RA NPT		
5U13F503	FIL SY1 3/8 20 RA NPT	**5U25F505**	FIL SY2 3/4 20 RA NPT		

The job of the filter purifier is to separate liquid and solid particles dispersed in the compressed air with a high degree of efficiency.
This separation is achieved by means of a special filtering element called a "coalescence cartridge".
It is particularly indicated for eliminating traces of oil present in the compressed air. The air flow rate must remain below the maximum values to achieve the desired degree of purification. Beyond this value, there may be a decline in the quality of air from the purifier.
On the front and back there is a port (1/8" BSPP for size 1 and 1/4" BSPP for size 2) that can be used with pressure gauges, pressure switches or as an additional air intake. **The air taken from here is not purified**.

TECHNICAL DATA		DEP SY1			DEP SY2			
Threaded port		1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Degree of filtration	µm	0.01 (0.4 microinch) - output air purity class ISO8573-1: 1.7.2						
Max. input pressure	bar	15			13			
	MPa	1.5			1.3			
	psi	217			188			
Suggested flow rate at 6.3 bar (0.63 MPa; 91 psi)	Nl/min	550			620			
	scfm	9			37			
Maximun suggested flow rate		See graph on the next page						
		N.B.: flow rates higher than the recommended value reduces purification efficiency						
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			
Weight	pounds	0.43	0.42	0.40	1.06	1	0.99	0.97
Condensate drain		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure						
Fluid		Compressed air or other inert gases						
Cup capacity	fluid ounce oz	0.51			1.35			
Mounting position		Vertical			Vertical			
Port for additional air take-off (not purified air)		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			1500			
(0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	scfm	18			53			
Wall fixing screws		N. 8-32 unc x 2			N. 10-24 unc x 2			
Notes on use		It is advisable to mount a 5 µm (200 microinch) filter upstream of the purifier to retain solid particles						

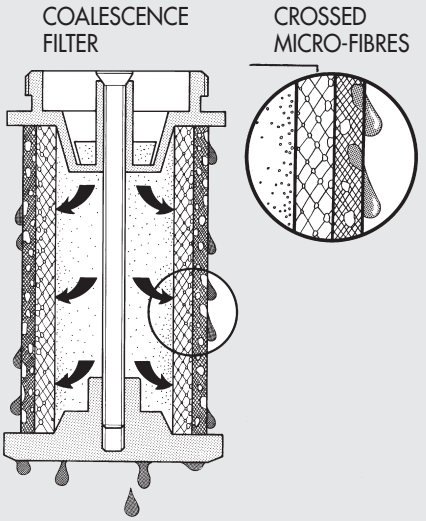
COMPONENTS

① Technopolymer depurator body
② IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium
③ Coalescence cartridge
④ Technopolymer cartridge support
⑤ Drain (RMSA)
⑥ Technolpolymer plate
⑦ NBR o-ring gaskets
⑧ Clear technopolymer bowl



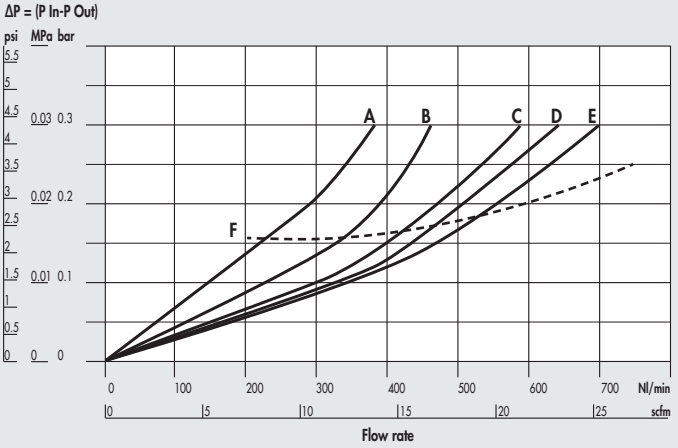
HOW THE COALESCENCE CARTRIDGE WORKS

Air from the mains – full of impurities – flows into the coalescence cartridge and then passes through the crossed micro-fibres that make up the cartridge. During this movement the liquid particles come into contact with the crossed micro-fibres and adhere to them. Due to the air pressure and gravity they join up with other micro-drops at each cross-over point and gradually increase in volume, leading to the physical phenomenon called coalescence. When they stop moving, the drops deposit on the outside of the cartridge, from which they detach and drop to the bottom.
Since the volume of liquid leaving the cartridge is exactly the same as the drops arriving, the coalescence cartridge ought to work indefinitely. Solid particles are caught with the same efficiency but, unlike drops, they are not drained out and clog the cartridge. To get round this problem, it is necessary to mount a 5μm (200 microinch) prefilter before the fine oil filter to separate the solid particles first.

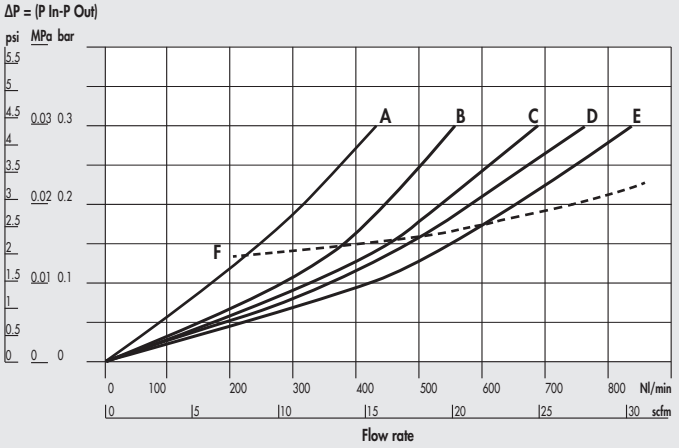


FLOW CHARTS

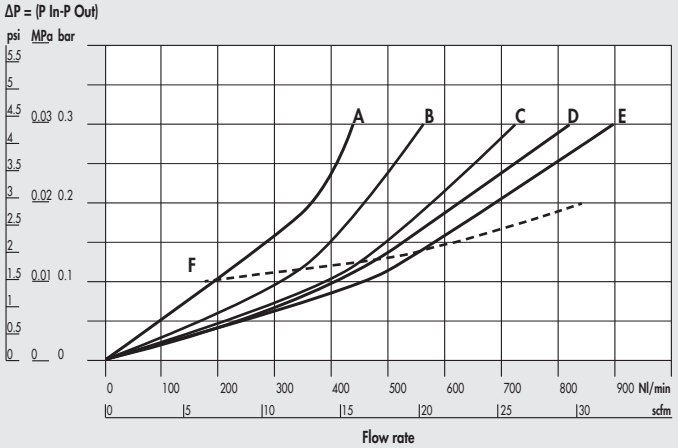
DEP Syntesi® **SY1** 1/8″



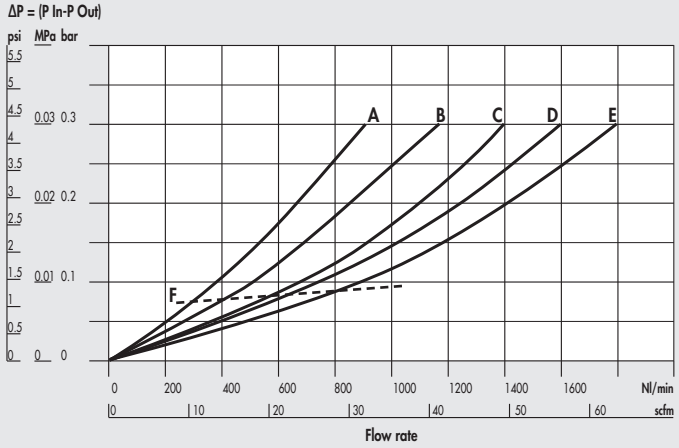
DEP Syntesi® **SY1** 1/4″



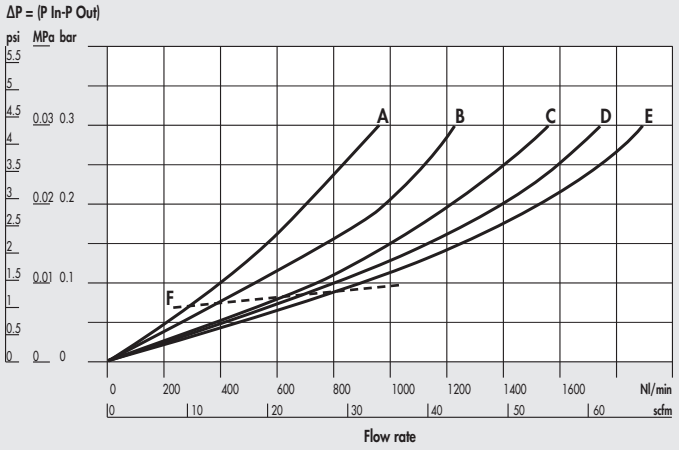
DEP Syntesi® **SY1** 3/8″



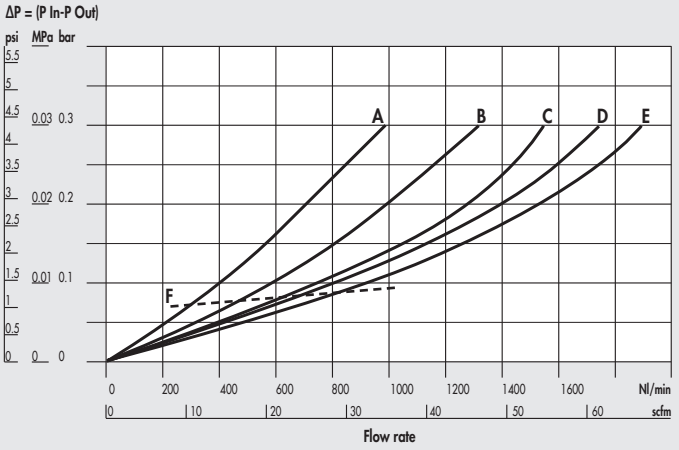
DEP Syntesi® **SY2** 3/8″



DEP Syntesi® **SY2** 1/2"

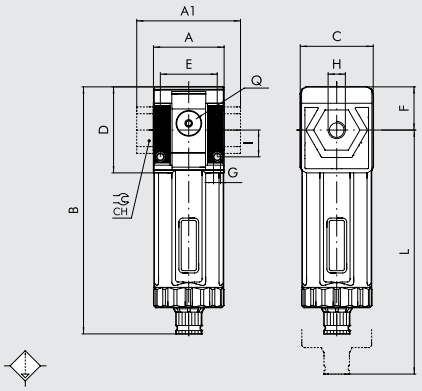


DEP Syntesi® **SY2** 3/4" - 1"



A = 2.5 bar - 0.25 MPa - 36 psi
B = 4 bar - 0.4 MPa - 58 psi
C = 6.3 bar - 0.63 MPa - 91 psi
D = 8 bar - 0.8 MPa - 116 psi
E = 10 bar - 1 MPa - 145 psi
F = max suggested flow

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			2.4			
A1		-	-	1.73	-	-	3.74	3.74
B	RMSA	5.83			7			
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	RMSA	7.95			9.65			
Q (no. 2 additional air takes-off)		1/8" BSPP			1/4" BSPP			

KEY TO CODES

5U	1	1	D	10	1
SYNTESI	**SIZE**	**THREADED INPUT CONNECTION**	**ELEMENT**	**TYPE**	**THREADED OUTPUT CONNECTION**
56 Syntesi NPT	**1** Size 1	**0** Without bushing **1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port	**D** Depurator	**10** RMSA	**0** Without bushing **1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port
	2 Size 2	**0** Without bushing **3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port			**0** Without bushing **3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.

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 DEPURATOR	
5U10D100	DEP SY1 RMSA NPT without bushings
5U11D101	DEP SY1 1/8 RMSA NPT
5U12D102	DEP SY1 1/4 RMSA NPT
5U13D103	DEP SY1 3/8 RMSA NPT

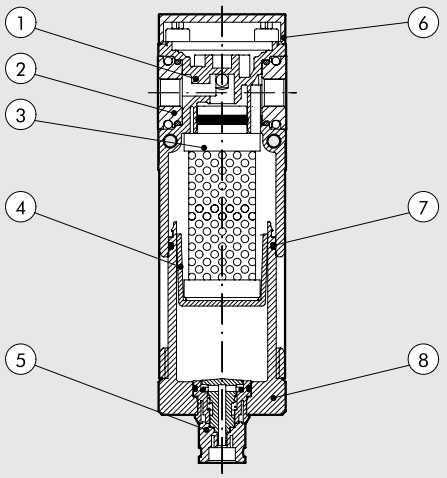
Code	Description
Syntesi® SY2 DEPURATOR	
5U20D100	DEP SY2 RMSA NPT without bushings
5U23D103	DEP SY2 3/8 RMSA NPT
5U24D104	DEP SY2 1/2 RMSA NPT
5U25D105	DEP SY2 3/4 RMSA NPT
5U26D106	DEP SY2 1 RMSA NPT

Activated-carbon filtering systems achieve the highest standard of purification possible in industrial applications. They eliminate all traces of oils, solvents and hydrocarbons, and remove unpleasant odours.
The operating principle uses activated carbon, which absorbs most of the polluting particles in the air thanks to minute holes in the granules of carbon.
There are two 1/8" BSPP ports, one on the front and one on the back, for use with pressure gauges or pressure switches or, considering the high flow rate, as additional air take-off. **The air taken from here is not filtered by the activated-carbon cartridge**.
Cartridge life and efficiency can be increased by using pre-filtered (5µm = 200 microinch) and purified (0.01µm = 0.4 microinch) air.
The cartridge must be replaced at set intervals as there is no difference in load loss between an efficient cartridge and a saturated one.
N.B.: to ensure the performance and duration stated on the data sheet, the load loss (ΔP) must not exceed 1 psi.

TECHNICAL DATA		FIL CA SY1			FIL CA SY2			
Threaded port		1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Residual oil at 20°C *	mg/m^3	0.003 - output air purity class ISO8573-1: 1.7.1						
Duration of cartridge *	hours	4000			4000			
Max. inlet pressure	bar	15			13			
	MPa	1.5			1.3			
	psi	217			188			
Suggested flow rate at 6.3 bar (0.63 MPa; 91 psi)	Nl/min	350			800			
	scfm	12			28			
		N.B.: flow rates higher than the recommended value reduces purification efficiency						
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			
Weight	pounds	0.43	0.42	0.40	1.06	1	0.99	0.97
Condensate drain		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure						
Fluid		0.01 µm filtred and depurated air						
Mounting position		In any position			In any position			
Additional air take-off port (unfiltered air from cartridge CA)		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			1500			
(0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	scfm	18			53			
Wall fixing screws		N. 8-32 unc x 2			N. 10-24 unc x 2			
Notes on use		Upstream it's necessary to mount a coalescence filter depurator of 0.01µm (0.4 microinch)						
* if the load loss of 1 psi is not exceeded								

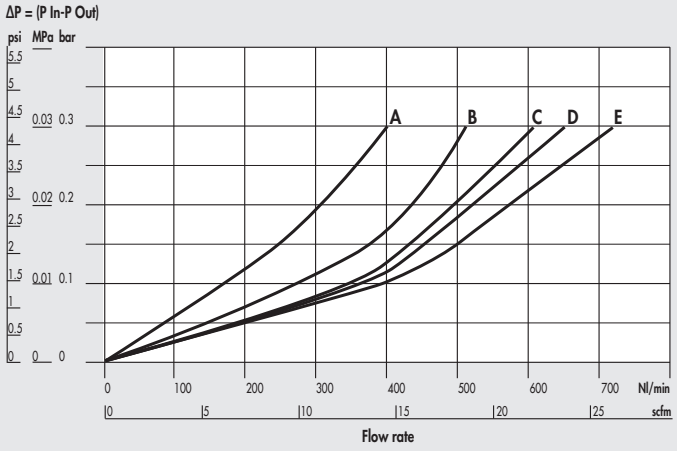
COMPONENTS

① Technopolymer depurator body
② IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium
③ Active carbon cartridge
④ Technopolymer cartridge support
⑤ Drain (RMSA)
⑥ Technolpolymer plate
⑦ NBR o-ring gasket
⑧ Clear technopolymer bowl

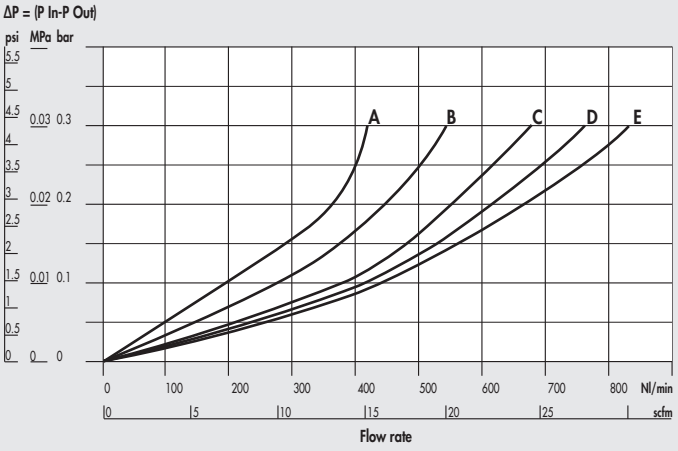


FLOW CHARTS

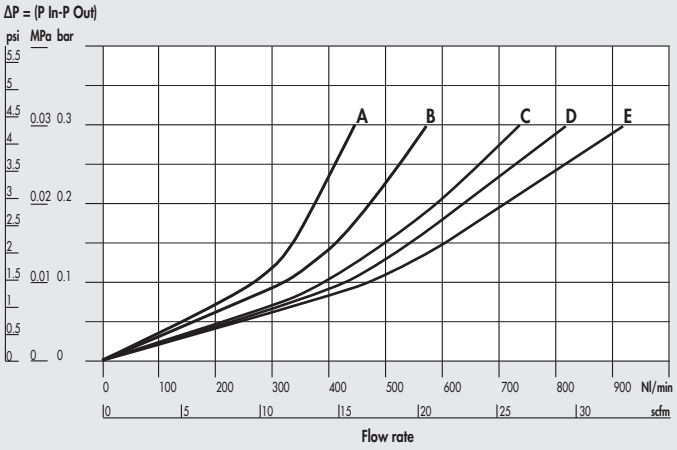
FIL CA Syntesi® **SY1** 1/8"



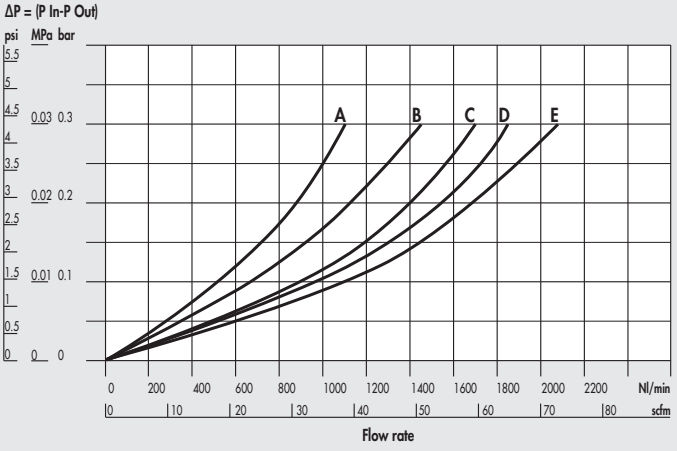
FIL CA Syntesi® **SY1** 1/4"



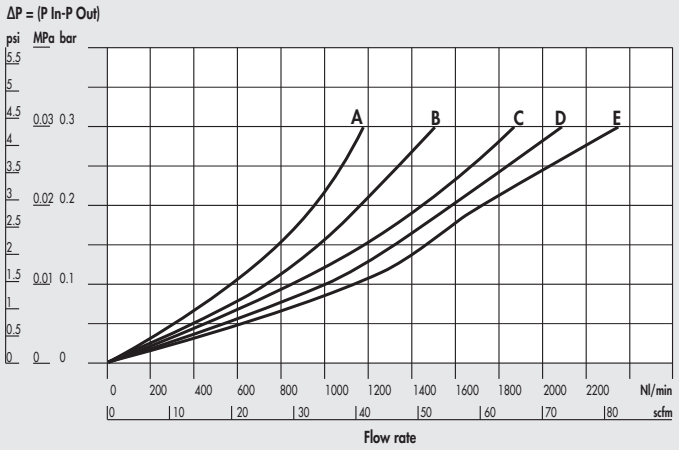
FIL CA Syntesi® **SY1** 3/8"



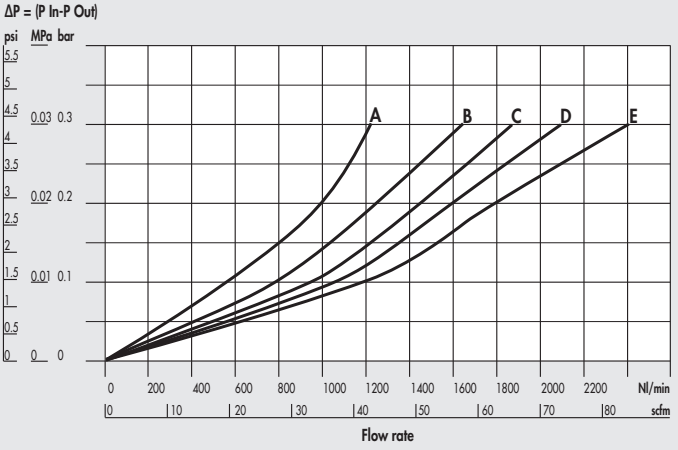
FIL CA Syntesi® **SY2** 3/8"



FIL CA Syntesi® **SY2** 1/2"

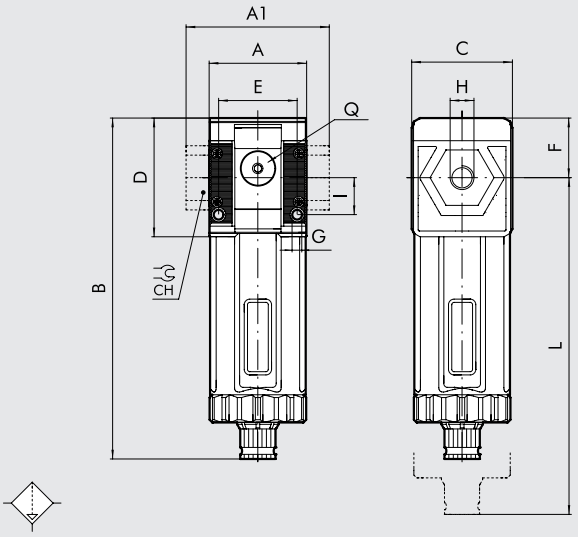


FIL CA Syntesi® **SY2** 3/4" - 1"



A = 2.5 bar - 0.25 MPa - 36 psi
B = 4 bar - 0.4 MPa - 58 psi
C = 6.3 bar - 0.63 MPa - 91 psi
D = 8 bar - 0.8 MPa - 116 psi
E = 10 bar - 1 MPa - 145 psi

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			2.4			
A1		-	-	1.73	-	-	3.74	3.74
B	RMSA	5.83			7			
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	RMSA	7.95			9.65			
Q (no. 2 additional air takes-off)		1/8″ BSPP			1/4″ BSPP			

KEY TO CODES

5U	1	1	C	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	TYPE	THREADED OUTPUT CONNECTION
5U Syntesi NPT	**1** Size 1	**0** Without bushing **1** 1/8″ NPT port **2** 1/4″ NPT port **3** 3/8″ NPT port	**C** Active carbon filter	**10** RMSA	**0** Without bushing **1** 1/8″ NPT port **2** 1/4″ NPT port **3** 3/8″ NPT port
	2 Size 2	**0** Without bushing **3** 3/8″ NPT port **4** 1/2″ NPT port **5** 3/4″ NPT port **6** 1″ NPT port			**0** Without bushing **3** 3/8″ NPT port **4** 1/2″ NPT port **5** 3/4″ NPT port **6** 1″ NPT port

RMSA: Drain with manual condensate discharge and automatic discharge at zero pressure.

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 ACTIVE CARBON FILTER	
5U10C100	AC SY1 RMSA NPT without bushings
5U11C101	AC SY1 1/8 RMSA NPT
5U12C102	AC SY1 1/4 RMSA NPT
5U13C103	AC SY1 3/8 RMSA NPT

Code	Description
Syntesi® SY2 ACTIVE CARBON FILTER	
5U20C100	AC SY2 RMSA NPT without bushings
5U23C103	AC SY2 3/8 RMSA NPT
5U24C104	AC SY2 1/2 RMSA NPT
5U25C105	AC SY2 3/4 RMSA NPT
5U26C106	AC SY2 1 RMSA NPT

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.

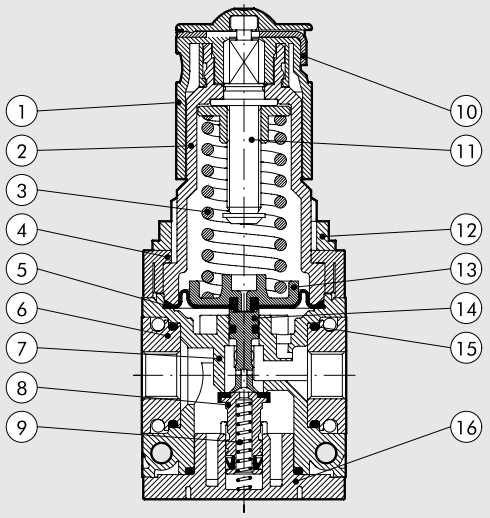
A special device relieves downstream pressure rapidly when the upstream pressure drops to zero. This means the regulator can be positioned between a valve and a cylinder because the air can flow in both directions, towards the cylinder with regulated pressure, or return towards the valve during relief.

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 (0.5 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						

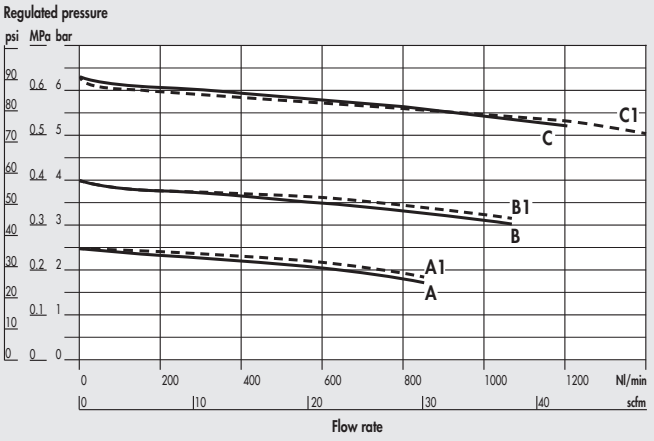
COMPONENTS

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
⑪ OT58 brass adjusting screw
⑫ Technopolymer ring nut
⑬ Technopolymer plate
⑭ Technopolymer rod
⑮ NBR o-ring gasket
⑯ Technopolymer plug

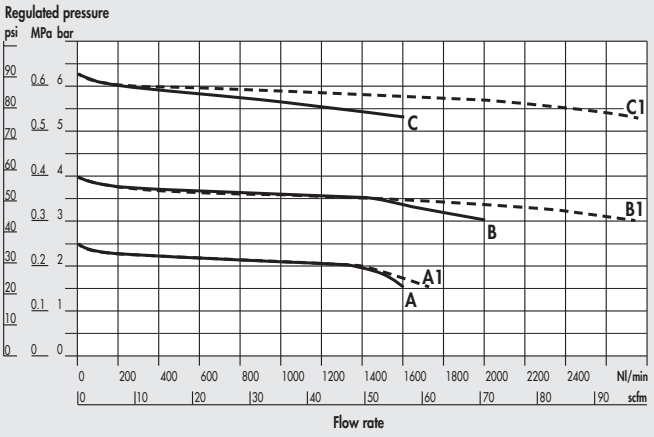


FLOW CHARTS

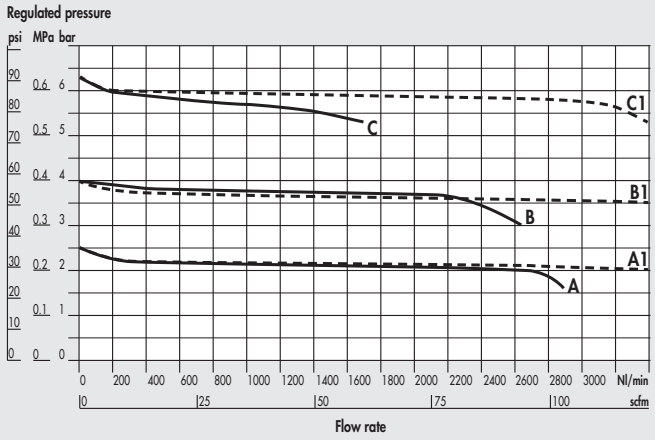
REG Syntesi® **SY1** 1/8"



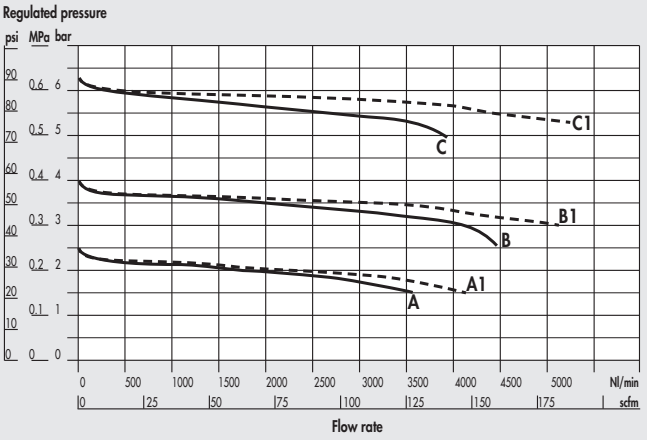
REG Syntesi® **SY1** 1/4"



REG Syntesi® **SY1** 3/8"



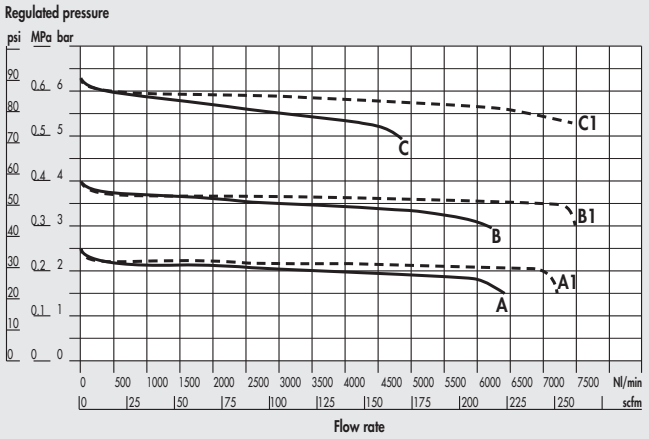
REG Syntesi® **SY2** 3/8"



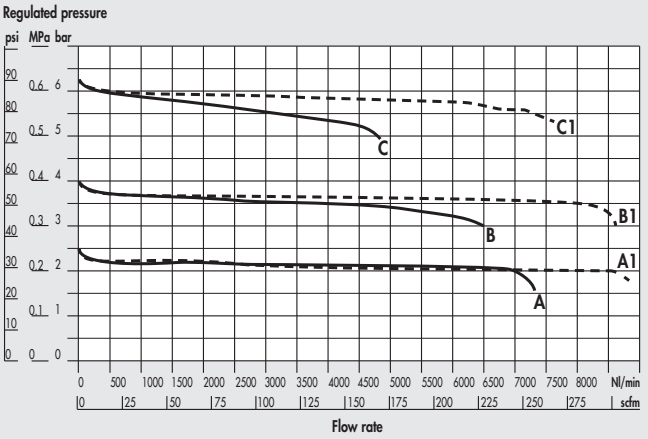
A = P In 7 bar (101.5 psi) - P Out 2.5 bar (36 psi)
B = P In 7 bar (101.5 psi) - P Out 4 bar (58 psi)
C = P In 7 bar (101.5 psi) - P Out 6.3 bar (91 psi)

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)

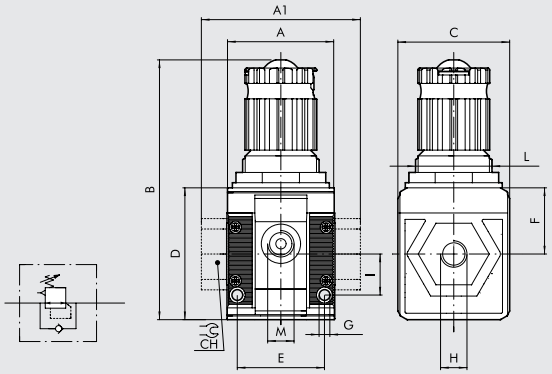
REG Syntesi® **SY2** 1/2"



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			2.4			
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 **1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port	**R** Pressure regulator	**10** 0 - 30 psi **12** 0 - 60 psi **14** 0 - 120 psi **16** 0 - 180 psi	**0** Without bushing **1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port
	2 Size 2	**0** Without bushing **3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port			**0** Without bushing **3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port

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

Code	Description
Syntesi® SY1 REGULATOR	
5U13R143	REG SY1 3/8 0-120 NPT
5U13R163	REG SY1 3/8 0-180 NPT
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

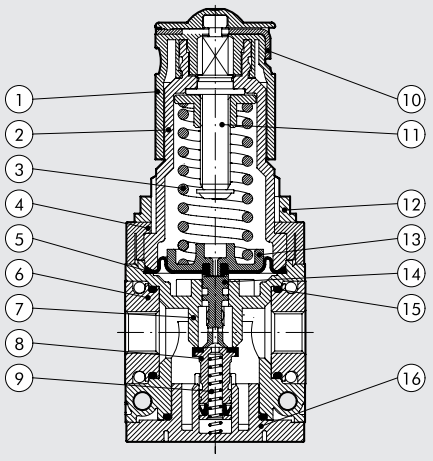
Code	Description
Syntesi® SY2 REGULATOR	
5U24R144	REG SY2 1/2 0-120 NPT
5U24R164	REG SY2 1/2 0-180 NPT
5U25R145	REG SY2 3/4 0-120 NPT
5U25R165	REG SY2 3/4 0-180 NPT
5U26R146	REG SY2 1 0-120 NPT
5U26R166	REG SY2 1 0-180 NPT

The in-series regulator is used to take air at a set pressure from the ports on the front and back of the body, while the pneumatic inlet and outlet ports are connected directly.
It is possible for instance to assemble several regulators side by side, all supplied at the same pressure, and obtain different regulated pressures, regardless of the pressure of the previous module.
The in-series regulator uses the same construction principles as the standard regulator, so the advantages are the same, such as compensation for upstream pressure changes, relief valve, rapid relief of the downstream pressure and a padlockable push-lock knob.

TECHNICAL DATA		IN-SERIES REGULATOR SY1			IN-SERIES REGULATOR SY2			
Threaded inlet port, through		1/8″ NPT	1/4″ NPT	3/8″ NPT	3/8″ NPT	1/2″ NPT	3/4″ NPT	1″ NPT
Utility threaded port		1/8″ BSPP			1/4″ BSPP			
Max. input 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	330			540			
	scfm	12			19			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	500			1000			
	scfm	18			35			
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						
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 exhaust						

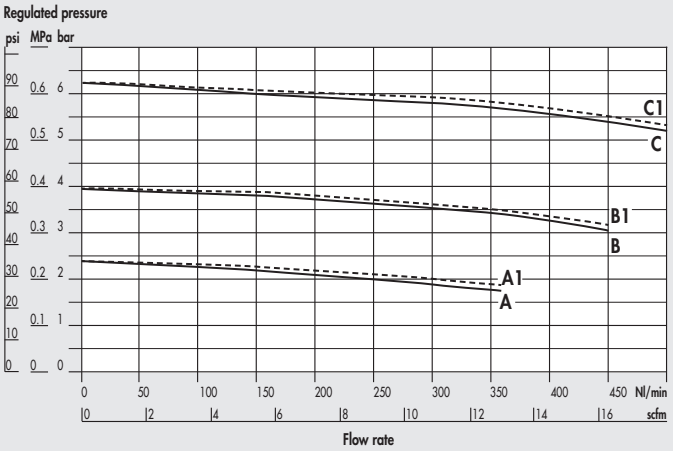
COMPONENTS

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 body
⑧ OT58 brass valve, with NBR vulcanized gasket
⑨ Stainless steel valve spring
⑩ Plate for knob locking
⑪ OT58 brass adjusting screw
⑫ Technopolymer ring nut
⑬ Technopolymer plate
⑭ Technopolymer rod
⑮ NBR o-ring gaskets
⑯ Technopolymer plug



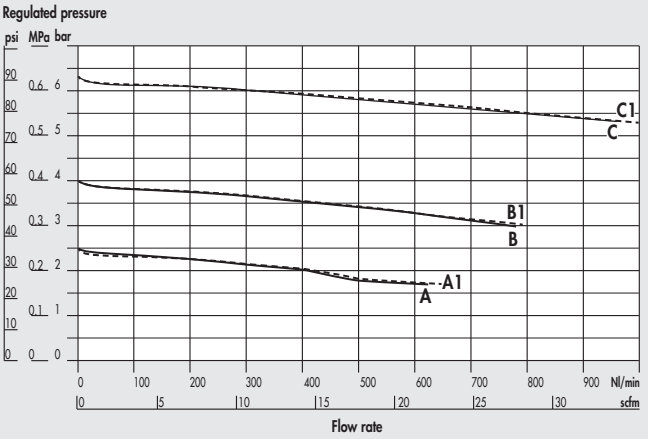
FLOW CHARTS

REG BATTERY Syntesi® **SY1** 1/4"-1/8"-3/8"



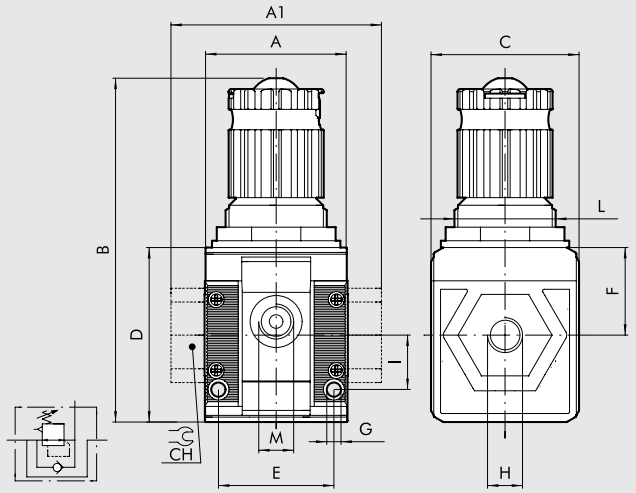
A = P In 7 bar (101.5 psi) - P Out 2.5 bar (36 psi)
B = P In 7 bar (101.5 psi) - P Out 4 bar (58 psi)
C = P In 7 bar (101.5 psi) - P Out 6.3 bar (91 psi)

REG BATTERY Syntesi® **SY2** 3/8" - 1/2" - 3/4" - 1"



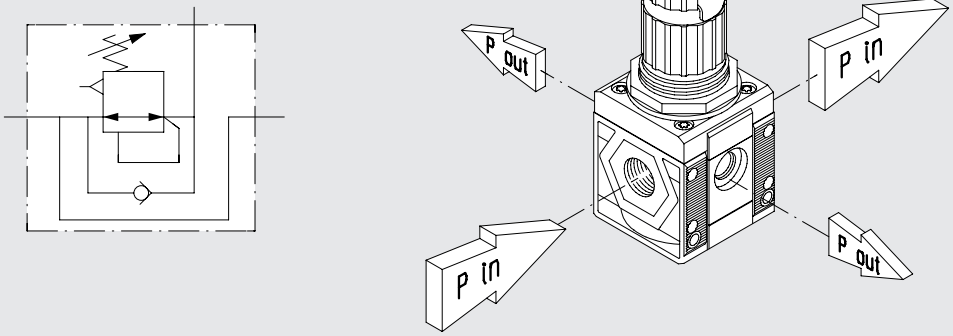
A1 = P In 10 bar (145 psi) - P Out 2.5 bar (36 psi)
B1 = P In 10 bar (145 psi) - P Out 4 bar (58 psi)
C1 = P In 10 bar (145 psi) - P Out 6.3 bar (91 psi)

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			2.4			
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 (use)	1/8" BSPP			1/4" BSPP			

FUNCTION DIAGRAM



KEY TO CODES

56	1	1	R	24	1
SYNTESI	**SIZE**	**THREADED INPUT CONNECTION**	**ELEMENT**	**IN-SERIES REGULATOR SETTING RANGE**	**THREADED OUTPUT CONNECTION**
56 Syntesi NPT	**1** Size 1	**0** Without bushing **1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port	**R** Pressure regulator	**20** 0 - 30 psi **22** 0 - 60 psi **24** 0 - 120 psi **26** 0 - 180 psi	**0** Without bushing **1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port
	2 Size 2	**0** Without bushing **3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port			**0** Without bushing **3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port

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
Syntesi® SY1 IN-SERIES REGULATOR		**Syntesi® SY2 IN-SERIES REGULATOR**	
5U10R240	In-series REG SY1 0-120 NPT without bushings	**5U20R240**	In-series REG SY2 0-120 NPT without bushings
5U10R260	In-series REG SY1 0-180 NPT without bushings	**5U20R260**	In-series REG SY2 0-180 NPT without bushings
5U11R241	In-series REG SY1 1/8 0-120 NPT	**5U23R243**	In-series REG SY2 3/8 0-120 NPT
5U11R261	In-series REG SY1 1/8 0-180 NPT	**5U23R263**	In-series REG SY2 3/8 0-180 NPT
5U12R242	In-series REG SY1 1/4 0-120 NPT	**5U24R244**	In-series REG SY2 1/2 0-120 NPT
5U12R262	In-series REG SY1 1/4 0-180 NPT	**5U24R264**	In-series REG SY2 1/2 0-180 NPT
5U13R243	In-series REG SY1 3/8 0-120 NPT	**5U25R245**	In-series REG SY2 3/4 0-120 NPT
5U13R263	In-series REG SY1 3/8 0-180 NPT	**5U25R265**	In-series REG SY2 3/4 0-180 NPT
		5U26R246	In-series REG SY2 1 0-120 NPT
		5U26R266	In-series REG SY2 1 0-180 NPT

NOTES

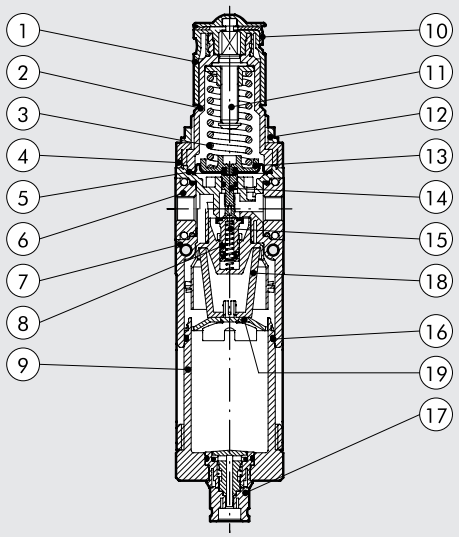
This device combines in a single unit the functions of filtration, condensate separation and pressure regulation.
It is made up of the same elements forming the filter and the regulator, so the performance and advantages are the same:

- Separation of condensate and larger liquid and solid particles by centrifugation.
- Two condensate drain options (RMSA and RA).
- 360° visually inspection of the condensate level, via transport spy-holes.
- Rolling diaphragm regulator, allowing maximum precision and flow rate, and minimal friction.
- Compensation for upstream pressure changes.
- Pressure relief valve.
- Quick downstream pressure relief.
- Padlockable push-lock knob.
- Front and rear ports for pressure gauges, pressure switches or, considering the high flow rate, for use as additional filtered and regulated air take-off.

TECHNICAL DATA		FR SY1			FR SY2			
Threaded port		1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Degree of filtration	µm	yellow: 5 (200 microinch) - output air purity class ISO8573-1: 3.7.4						
		white: 20 (790 microinch) - output air purity class ISO8573-1: 4.7.4						
		blue: 50 (2000 microinch) - output air purity class ISO8573-1: 5.7.4						
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; 7.25 psi)	Nl/min	500	800	2200	3200	4300	5200	
(inlet pressure 10 bar; 1 MPa; 145 psi)	scfm	18	28	78	113	152	184	
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	1300	2000	3000	5800	7200	7400	
(inlet pressure 10 bar; 1 MPa; 145 psi)	scfm	46	71	106	205	255	262	
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	0.54	0.53	0.51	1.37	1.32	1.30	1.28
Fluid		Compressed air or other inert gases						
Mounting position		Vertical						
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			
Cup capacity	fluid ounce oz	1.02			2.37			
Condensate drain		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure						
		RA: automatic drain with condensate discharge, independent of pressure and flow rate						
		Note: the maximum input pressure for the RA version must not exceed 145 psi						
Wall fixing screws		N. 8-32 unc x 2			N. 2 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.						

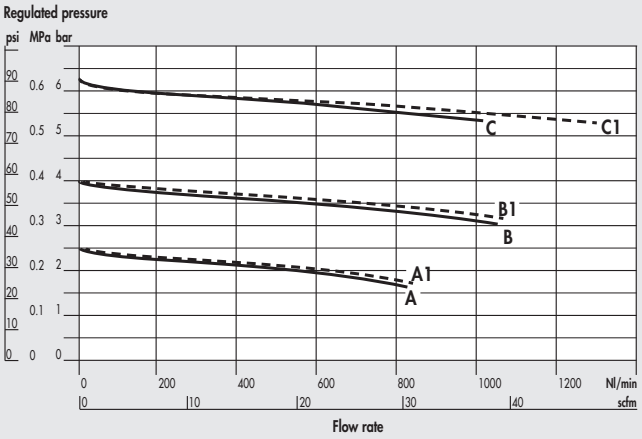
COMPONENTS

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 body
⑧ OT58 brass valve, with NBR vulcanized valve
⑨ Clear technopolymer bowl
⑩ Plate for knob locking
⑪ OT58 brass adjusting screw
⑫ Technopolymer ring nut
⑬ Technopolymer plate
⑭ Technopolymer rod
⑮ Stainless steel valve spring
⑯ O-ring NBR gaskets
⑰ Drain (RMSA)
⑱ Sintered HDPE filter cartridge
⑲ Technopolymer screen

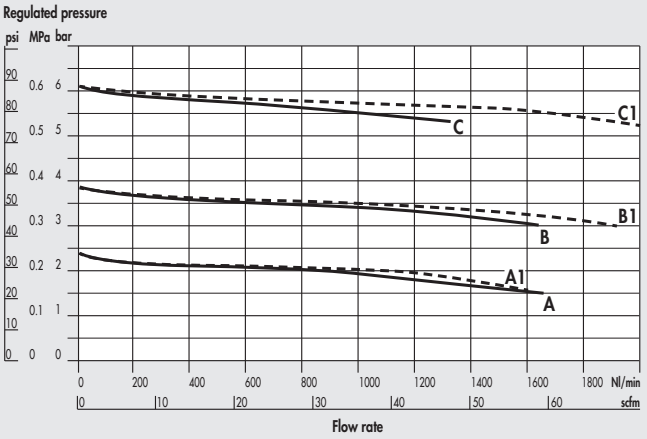


FLOW CHARTS

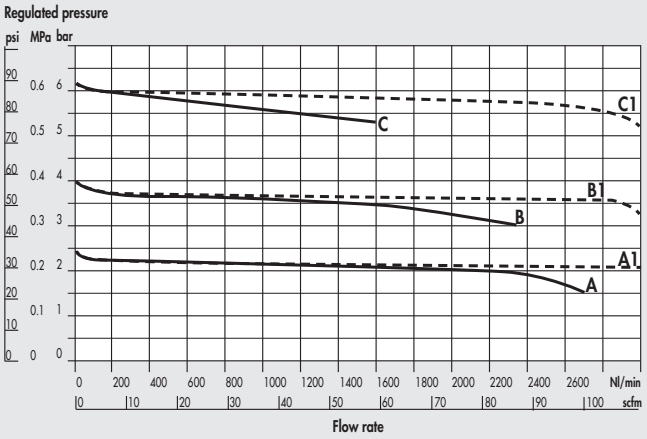
FR Syntesi® **SY1** 1/8″



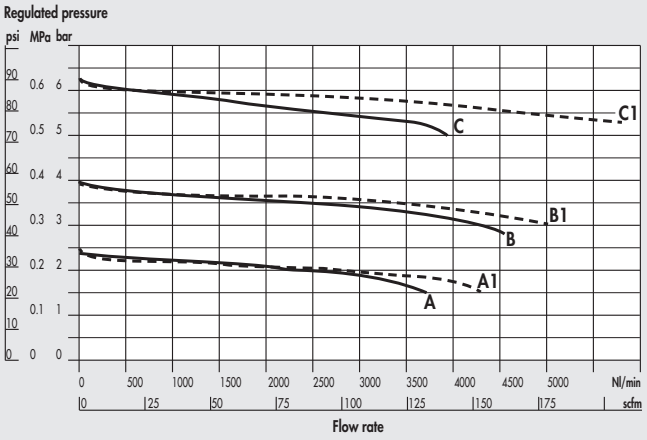
FR Syntesi® **SY1** 1/4″



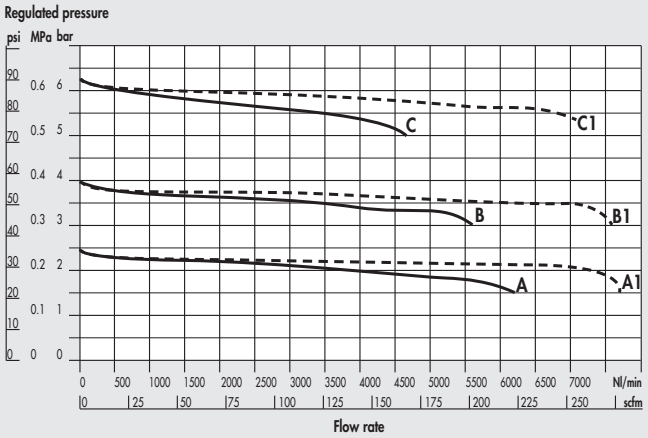
FR Syntesi® **SY1** 3/8″



FR Syntesi® **SY2** 3/8″

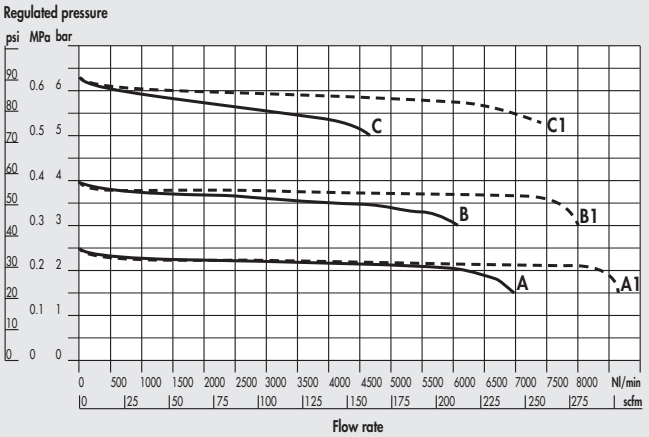


FR Syntesi® **SY2** 1/2"



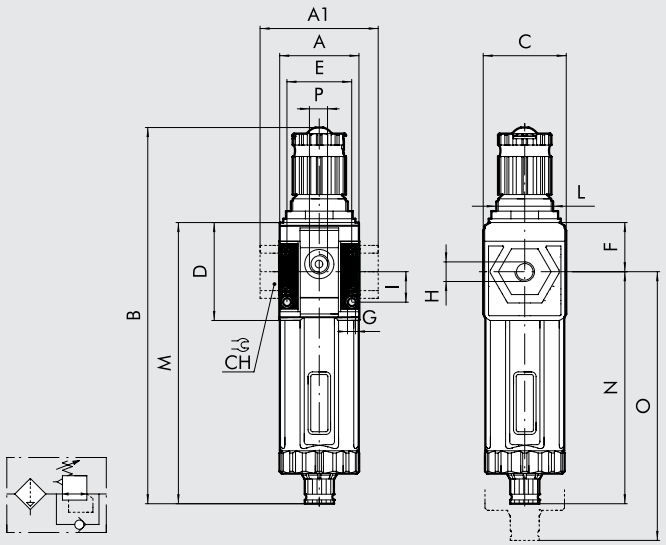
A = P In 7 bar (101.5 psi) - P Out 2.5 bar (36 psi)
B = P In 7 bar (101.5 psi) - P Out 4 bar (58 psi)
C = P In 7 bar (101.5 psi) - P Out 6.3 bar (91 psi)

FR Syntesi® **SY2** 3/4" - 1"



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)

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			2.4			
A1		-	-	1.73	-	-	3.74	3.74
B	RMSA	7.60			9.68			
	RA	7.95			9.84			
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	RMSA	5.83			7			
	RA	5.99			7.16			
N	RMSA	4.82			5.5			
	RA	4.97			5.66			
O	RMSA	7.95			9.65			
	RA	8.11			9.8			
P (pressure gauge port or additional air takes-off)		1/8" BSPP			1/4" BSPP			

NOTES

KEY TO CODES

5U	1	1	B	24	1
SYNTESI	**SIZE**	**THREADED INPUT CONNECTION**	**ELEMENT**	**DEGREE OF FILTRATION, TYPE OF CONDENSATE DRAIN AND SETTING RANGE**	**THREADED OUTPUT CONNECTION**
5U Syntesi NPT	**1** Size 1	**0** Without bushing **1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port	**B** Filter-regulator	**10** 5 µm (200 microinch), RMSA, 0 - 30 psi **20** 20 µm (790 microinch), RMSA, 0 - 30 psi **30** 50 µm (2000 microinch), RMSA, 0 - 30 psi **40** 5 µm (200 microinch), RA, 0 - 30 psi **50** 20 µm (790 microinch), RA, 0 - 30 psi **60** 50 µm (2000 microinch), RA, 0 - 30 psi **12** 5 µm (200 microinch), RMSA, 0 - 60 psi **22** 20 µm (790 microinch), RMSA, 0 - 60 psi **32** 50 µm (2000 microinch), RMSA, 0 - 60 psi **42** 5 µm (200 microinch), RA, 0 - 60 psi **52** 20 µm (790 microinch), RA, 0 - 60 psi **62** 50 µm (2000 microinch), RA, 0 - 60 psi **14** 5 µm (200 microinch), RMSA, 0 - 120 psi **24** 20 µm (790 microinch), RMSA, 0 - 120 psi **34** 50 µm (2000 microinch), RMSA, 0 - 120 psi **44** 5 µm (200 microinch), RA, 0 - 120 psi **54** 20 µm (790 microinch), RA, 0 - 120 psi **64** 50 µm (2000 microinch), RA, 0 - 120 psi **16** 5 µm (200 microinch), RMSA, 0 - 180 psi **26** 20 µm (790 microinch), RMSA, 0 - 180 psi **36** 50 µm (2000 microinch), RMSA, 0 - 180 psi **46** 5 µm (200 microinch), RA, 0 - 180 psi **56** 20 µm (790 microinch), RA, 0 - 180 psi **66** 50 µm (2000 microinch), RA, 0 - 180 psi	**0** Without bushing **1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port
	2 Size 2	**0** Without bushing **3** 3/8" NPTport **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port			**0** Without bushing **3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.
RA: automatic drain with condensate discharge, independent of pressure and flow rate.

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
FILTER-REGULATOR Syntesi® SY1	
5U10B140	FR SY1 5 0-120 RMSA NPT without bushings
5U10B240	FR SY1 20 0-120 RMSA NPT without bushings
5U10B440	FR SY1 5 0-120 RA NPT without bushings
5U10B540	FR SY1 20 0-120 RA NPT without bushings
5U10B160	FR SY1 5 0-180 RMSA NPT without bushings
5U10B260	FR SY1 20 0-180 RMSA NPT without bushings
5U10B460	FR SY1 5 0-180 RA NPT without bushings
5U10B560	FR SY1 20 0-180 RA NPT without bushings
5U11B141	FR SY1 1/8 5 0-120 RMSA NPT
5U11B241	FR SY1 1/8 20 0-120 RMSA NPT
5U11B441	FR SY1 1/8 5 0-120 RA NPT
5U11B541	FR SY1 1/8 20 0-120 RA NPT
5U11B161	FR SY1 1/8 5 0-180 RMSA NPT
5U11B261	FR SY1 1/8 20 0-180 RMSA NPT
5U11B461	FR SY1 1/8 5 0-180 RA NPT
5U11B561	FR SY1 1/8 20 0-180 RA NPT
5U12B142	FR SY1 1/4 5 0-120 RMSA NPT
5U12B242	FR SY1 1/4 20 0-120 RMSA NPT
5U12B442	FR SY1 1/4 5 0-120 RA NPT
5U12B542	FR SY1 1/4 20 0-120 RA NPT
5U12B162	FR SY1 1/4 5 0-180 RMSA NPT
5U12B262	FR SY1 1/4 20 0-180 RMSA NPT
5U12B462	FR SY1 1/4 5 0-180 RA NPT
5U12B562	FR SY1 1/4 20 0-180 RA NPT

Code	Description
FILTER-REGULATOR Syntesi® SY1	
5U13B143	FR SY1 3/8 5 0-120 RMSA NPT
5U13B243	FR SY1 3/8 20 0-120 RMSA NPT
5U13B443	FR SY1 3/8 5 0-120 RA NPT
5U13B543	FR SY1 3/8 20 0-120 RA NPT
5U13B163	FR SY1 3/8 5 0-180 RMSA NPT
5U13B263	FR SY1 3/8 20 0-180 RMSA NPT
5U13B463	FR SY1 3/8 5 0-180 RA NPT
5U13B563	FR SY1 3/8 20 0-180 RA NPT
FILTER-REGULATOR Syntesi® SY2	
5U20B140	FR SY2 5 0-120 RMSA NPT without bushings
5U20B240	FR SY2 20 0-120 RMSA NPT without bushings
5U20B440	FR SY2 5 0-120 RA NPT without bushings
5U20B540	FR SY2 20 0-120 RA NPT without bushings
5U20B160	FR SY2 5 0-180 RMSA NPT without bushings
5U20B260	FR SY2 20 0-180 RMSA NPT without bushings
5U20B460	FR SY2 5 0-180 RA NPT without bushings
5U20B560	FR SY2 20 0-180 RA NPT without bushings
5U23B143	FR SY2 3/8 5 0-120 RMSA NPT
5U23B243	FR SY2 3/8 20 0-120 RMSA NPT
5U23B443	FR SY2 3/8 5 0-120 RA NPT
5U23B543	FR SY2 3/8 20 0-120 RA NPT
5U23B163	FR SY2 3/8 5 0-180 RMSA NPT
5U23B263	FR SY2 3/8 20 0-180 RMSA NPT
5U23B463	FR SY2 3/8 5 0-180 RA NPT
5U23B563	FR SY2 3/8 20 0-180 RA NPT

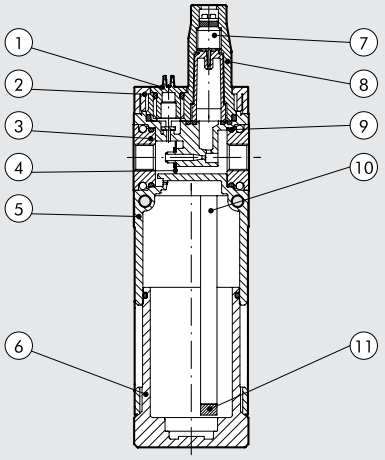
Code	Description
FILTER-REGULATOR Syntesi® SY2	
5U24B144	FR SY2 1/2 5 0-120 RMSA NPT
5U24B244	FR SY2 1/2 20 0-120 RMSA NPT
5U24B444	FR SY2 1/2 5 0-120 RA NPT
5U24B544	FR SY2 1/2 20 0-120 RA NPT
5U24B164	FR SY2 1/2 5 0-180 RMSA NPT
5U24B264	FR SY2 1/2 20 0-180 RMSA NPT
5U24B464	FR SY2 1/2 5 0-180 RA NPT
5U24B564	FR SY2 1/2 20 0-180 RA NPT
5U25B145	FR SY2 3/4 5 0-120 RMSA NPT
5U25B245	FR SY2 3/4 20 0-120 RMSA NPT
5U25B445	FR SY2 3/4 5 0-120 RA NPT
5U25B545	FR SY2 3/4 20 0-120 RA NPT
5U25B165	FR SY2 3/4 5 0-180 RMSA NPT
5U25B265	FR SY2 3/4 20 0-180 RMSA NPT
5U25B465	FR SY2 3/4 5 0-180 RA NPT
5U25B565	FR SY2 3/4 20 0-180 RA NPT
5U26B146	FR SY2 1 5 0-120 RMSA NPT
5U26B246	FR SY2 1 20 0-120 RMSA NPT
5U26B446	FR SY2 1 5 0-120 RA NPT
5U26B546	FR SY2 1 20 0-120 RA NPT
5U26B166	FR SY2 1 5 0-180 RMSA NPT
5U26B266	FR SY2 1 20 0-180 RMSA NPT
5U26B466	FR SY2 1 5 0-180 RA NPT
5U26B566	FR SY2 1 20 0-180 RA NPT

The pneumatic lubricator is the simplest way of efficiently lubricating the actuators linked to a circuit. As compressed air flows towards the lubricator, it encounters a flexible diaphragm which partially blocks the way, creating a small pressure difference between the inlet and outlet air. Being at the higher pressure, the oil in the cup is pumped through a tube with a filter towards the regulation pin. The quantity of oil can be metered accurately since the drops can be viewed through the transparent dome. Filling with oil must take place in the absence of pressure, unscrewing the plug next to the dome. On the front and back there is a port (1/8" BSPP for size 1 and 1/4" BSPP for size 2) that can be used with pressure gauges, pressure switches or as an additional air intake.

TECHNICAL DATA		LUB SY1			LUB SY2			
Threaded port		1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Type of lubrication		Oil mist						
Version		Manual filling from the top						
Max. input 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	1300	1700	2200	2300	3900	3900	
	scfm	46	60	78	81	138	138	
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	1600	3000	3650	3650	6100	6100	
	scfm	57	106	129	129	216	216	
Min/max temperature at 10 bar; 1 MPa; 145 psi	°C	From -10 to +50			From -10 to +50			
	°F	From 14 to +120			From 14 to +122			
Weight	pounds	0.41	0.40	0.38	1.05	1	0.99	0.96
Fluid		Compressed air or other inert gases						
Quantity of filled oil	fluid ounce oz	2.03			4.40			
Mounting position		Vertical			Vertical			
Port for additional air take-off		1/8" BSPP, front and rear, lubricated air			1/4" BSPP, front and rear, lubricated air			
Additional air take-off flow rate at 6.3 bar	Nl/min	450			800			
(0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	scfm	16			53			
Wall fixing screws		N. 8-32 unc x 2			N. 10-24 unc x 2			
Recommended oils		ISO and UNI FD22 (Energol HPL; Spinesso; Mobil DTE; Tellus oil)						
Notes on use		Install the lubricator as close as possible to the point of use. Fill the lubricator bowl with oil before pressurizing the system. Do not use cleaning oils, brake fluid oils or solvents in general. For the best lubrication results, set the drip rate to one drop for 11-22 scfm						

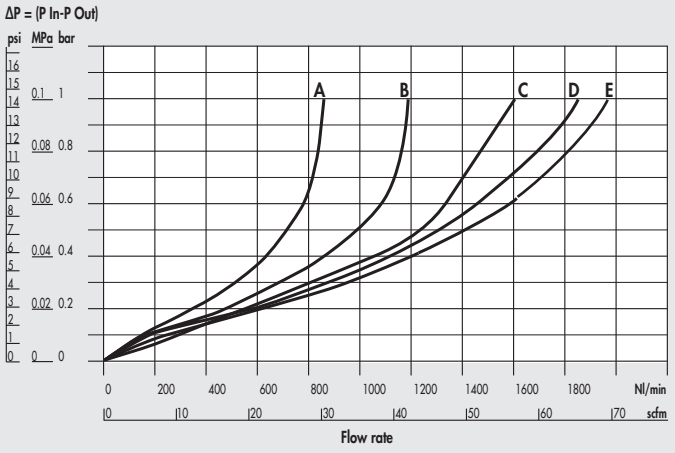
COMPONENTS

① Technopolymer oil filling plug
② Technopolymer flange
③ IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium
④ Venturi NBR diaphragm
⑤ Technopolymer body
⑥ Clear technopolymer bowl
⑦ OT 58 brass oil flow regulation needle
⑧ Clear technopolymer cover
⑨ NBR o-ring gasket
⑩ Rilsan® oil suction pipe
⑪ Oil filter

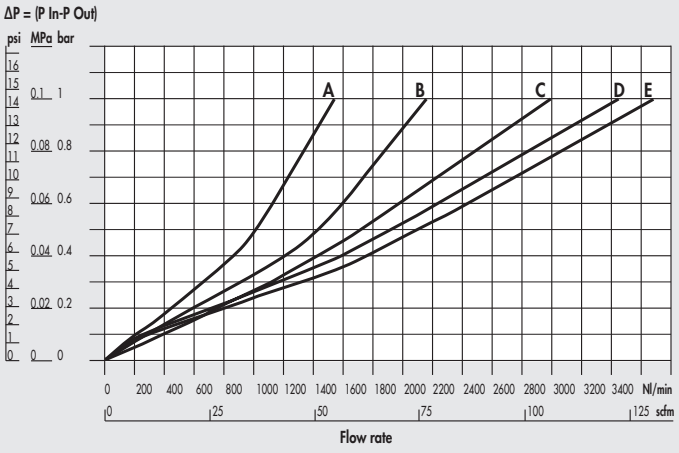


FLOW CHARTS

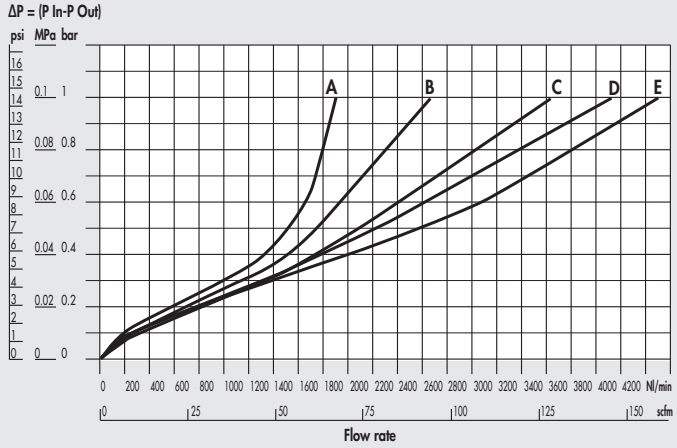
LUB Syntesi® **SY1** 1/8"



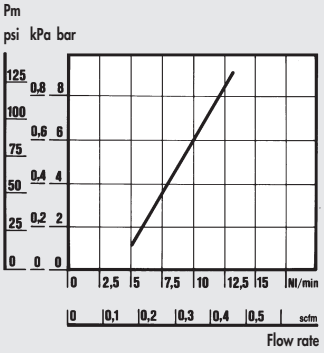
LUB Syntesi® **SY1** 1/4"



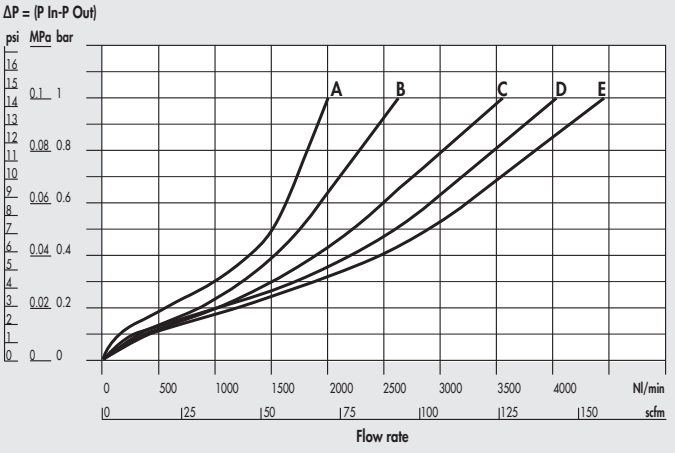
LUB Syntesi® **SY1** 3/8"



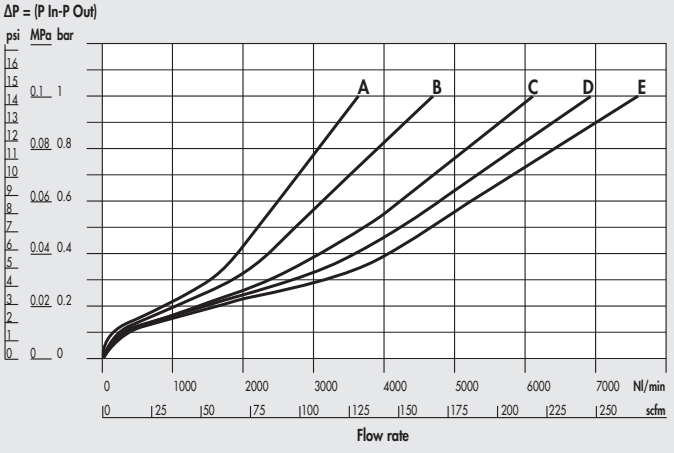
Minimum operating flow chart **SY1**



LUB Syntesi® **SY2** 3/8"

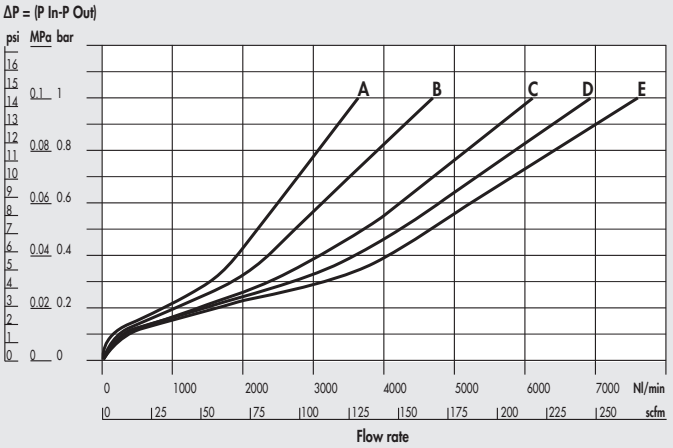


LUB Syntesi® **SY2** 1/2"

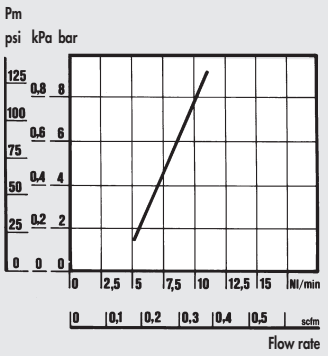


A = 2.5 bar - 0.25 MPa - 36 psi
B = 4 bar - 0.4 MPa - 58 psi
C = 6.3 bar - 0.63 MPa - 91 psi
D = 8 bar - 0.8 MPa - 116 psi
E = 10 bar - 1 MPa - 145 psi

LUB Syntesi® **SY2** 3/4" - 1"

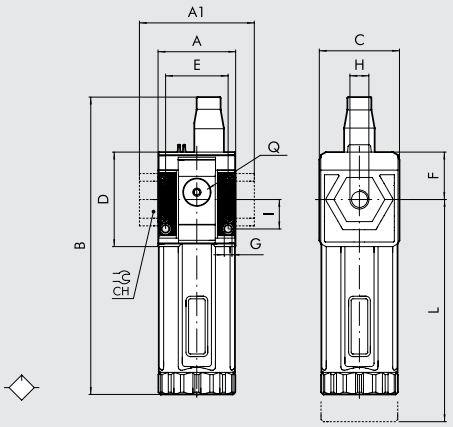


Minimum operating flow chart **SY2**



A = 2.5 bar - 0.25 MPa - 36 psi
B = 4 bar - 0.4 MPa - 58 psi
C = 6.3 bar - 0.63 MPa - 91 psi
D = 8 bar - 0.8 MPa - 116 psi
E = 10 bar - 1 MPa - 145 psi

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			2.4			
A1		-	-	1.73	-	-	3.74	3.74
B		6.38			7.89			
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		6.23			7.6			
Q (no. 2 additional air takes-off)		1/8" BSPP			1/4" BSPP			

KEY TO CODES

5U	1	1	L	10	1
SYNTESI	**SIZE**	**THREADED INPUT CONNECTION**	**ELEMENT**	**OIL FILLING**	**THREADED OUTPUT CONNECTION**
5U Syntesi NPT	**1** Size 1	**0** Without bushing **1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port	**L** Lubricator	**10** Manual filling from the top	**0** Without bushing **1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port
	2 Size 2	**0** Without bushing **3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port			**0** Without bushing **3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

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

Code	Description
Syntesi® SY1 LUBRICATOR	
5U10L100	LUB SY1 NPT without bushings
5U11L101	LUB SY1 1/8 NPT
5U12L102	LUB SY1 1/4 NPT
5U13L103	LUB SY1 3/8 NPT

Code	Description
Syntesi® SY2 LUBRICATOR	
5U20L100	LUB SY2 NPT without bushings
5U23L103	LUB SY2 3/8 NPT
5U24L104	LUB SY2 1/2 NPT
5U25L105	LUB SY2 3/4 NPT

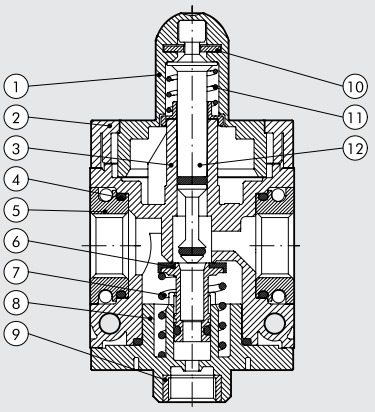
Code	Description
Syntesi® SY2 LUBRICATOR	
5U26L106	LUB SY2 1 NPT

This device separates the compressed air circuit from the main air supply. It is a three-way valve that relieves the downstream system in the closed position. This makes it useful for maintenance operations or when the air supply to a machine or piece of equipment needs to be shut off.
Manual, pneumatic, electro-pneumatic and assisted electro-pneumatic control versions are available. The last version must be used if the inlet pressure is outside the electro-pneumatic valve operating range, so for particularly low or high pressures.
The manual version can be locked when the valve is in the closed position, using one or two padlocks.
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 air intake.

TECHNICAL DATA		V3V SY1			V3V SY2			
Threaded port		1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Threaded discharge port		1/8" NPT			1/4" NPT			
Type of control		Manual - pneumatic - solenoid - solenoid pilot - assisted			Manual - Pneumatic - Cnomo elpn - Cnomo elpn pilot-assisted			
Max inlet pressure for pneumatic and solenoid pilot-assisted versions	bar	15			13			
	MPa	1.5			1.3			
	psi	217			188			
Inlet pressure for solenoid version	bar	3 - 10			3 - 10			
	MPa	0.3 - 1			0.3 - 1			
	psi	43 - 145			43 - 145			
Pilot pressure for pneumatic and solenoid pilot-assisted versions	bar	3 - 10			3 - 10			
	MPa	0.3 - 1			0.3 - 1			
	psi	43 - 145			43 - 145			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 0.5 bar (0.05 MPa; 7.25 psi)	Nl/min	800	1000	1100	2800	3000	3000	
	scfm	28	35	39	99	106	106	
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	1100	1500	1600	3600	4000	4000	
	scfm	39	53	57	127	141.5	141.5	
Drain flow rate at 6.3 bar (0.63 MPa; 91 psi)	Nl/min	500			2000			
	scfm	18			71			
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			
Padlockable knob		Included						
Weight	pounds	0.44	0.43	0.41	1.04	0.94	0.98	0.95
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			1500			
(0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14 psi)	scfm	18			53			
Wall fixing screws		N. 8-32 unc x 2			N. 10-24 unc x 2			
Bobbin capacity for electro-pneumatic version	W	12 VDC and 2VDC = 2W			24 VDC = 4W; 24 VAC, 110 VAC, 220 VAC = 4 VA			
		24 VAC, 110 VAC and 220 VAC = 3.5 VA						
Manual control of electro-pneumatic versions		Bistable: horizontal = OFF, vertical = ON						

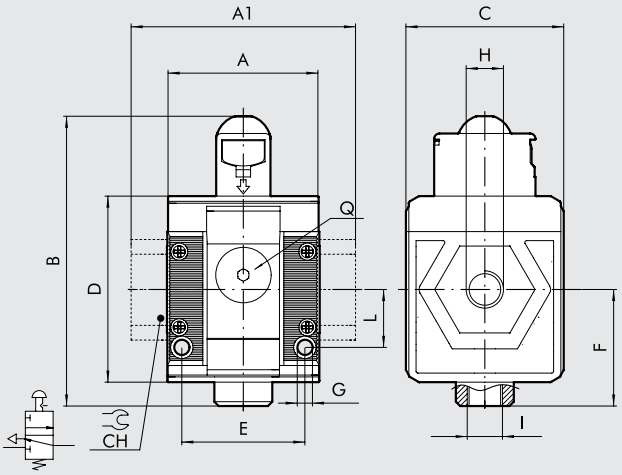
COMPONENTS

① Technopolymer knob
② Technopolymer hinge
③ Technopolymer body
④ NBR o-ring gasket
⑤ IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium
⑥ OT58 brass valve with NBR vulcanized gasket
⑦ Stainless steel valve spring
⑧ Technopolymer plug
⑨ OT58 brass threaded insert
⑩ Plate for knob locking
⑪ Stainless steel spring stem recovery
⑫ OT58 brass stem

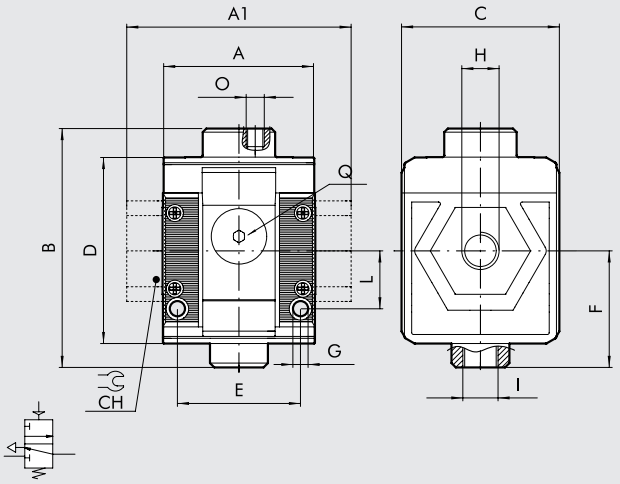


COMPONENTS

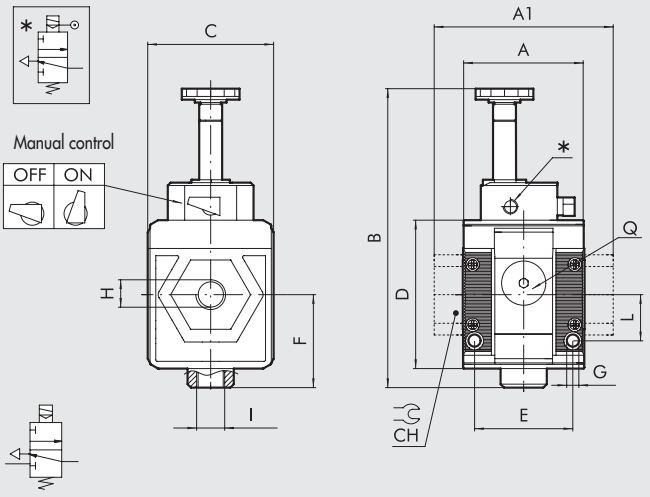
MANUAL **SY1-SY2**



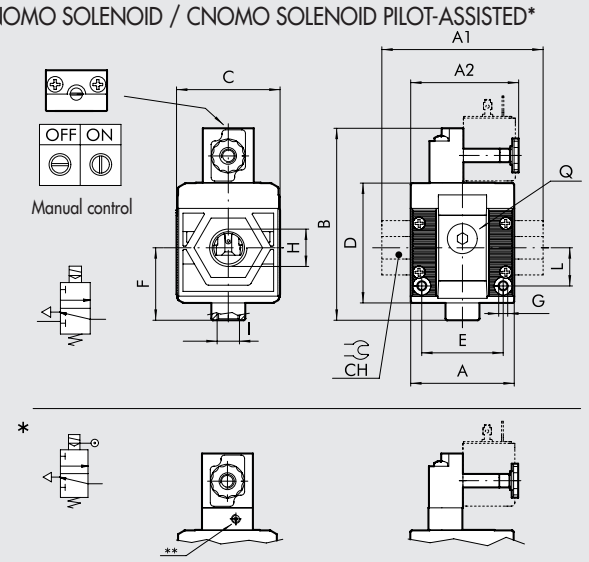
PNEUMATIC **SY1-SY2**



SOLENOID/SOLENOID PILOT-ASSISTED* **SY1**



CNOMO SOLENOID / CNOMO SOLENOID PILOT-ASSISTED* **SY2**



	MANUAL							PNEUMATIC							SOLENOID/SOLENOID PILOT-ASSISTED			CNOMO SOLENOID/CNOMO SOLENOID PILOT-ASSISTED			
	SIZE 1			SIZE 2				SIZE 1			SIZE 2				SIZE 1			SIZE 2			
H (threaded port) NPT	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
A	1.65			2.4				1.65			2.4				1.65			2.4			
A1	-	-	1.73	-	-	3.74	3.74	-	-	1.73	-	-	3.74	3.74	-	-	1.73	-	-	3.74	3.74
A2	-			-				-			-				-			2.56			
B	3.15			4.29				2.60			3.7				4.10			-			
Cnomo	-			-				-			-				-			4.45			
Cnomo pilot ass.	-			-				-			-				-			4.26			
C	1.73			2.4				1.73			2.4				1.73			2.4			
CH	-			-	-	1.26	1.41	-			-	-	1.26	1.41	-			-	-	1.26	1.41
D	2.03			2.77				2.03			2.77				2.03			2.77			
E	1.32			1.87				1.32			1.87				1.32			1.87			
F	1.23			1.68				1.23			1.68				1.23			1.68			
G	0.165			0.21				0.165			0.21				0.165			0.21			
I (exhaust)	1/8" NPT			1/4" NPT				1/8" NPT			1/4" NPT				1/8" NPT			1/4" NPT			
L	0.63			0.89				0.63			0.89				0.63			0.89			
O (pilot)	-			-				M5**			1/8" NPT				-			-			
Q (no. 2 additional air takes-off)	1/8" BSPP			1/4" BSPP				1/8" BSPP			1/4" BSPP				1/8" BSPP			1/4" BSPP			
*** Pilot**	-							-			-				M5**			M5**			

** AU 5/G M5 - 10/32 UNF adapter supplied

KEY TO CODES

5U	1	1	V	10	1
SYNTESI	**SIZE**	**THREADED INPUT CONNECTION**	**ELEMENT**	**TYPE**	**THREADED OUTPUT CONNECTION**
5U Syntesi NPT	**1** Size 1	**0** Without bushing **1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port	**V** Shut-off valve	**10** Manual **20** Pneumatic **30** Solenoid pilot-assisted **70** Solenoid	**0** Without bushing **1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port
	2 Size 2	**0** Without bushing **3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port			**0** Without bushing **3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

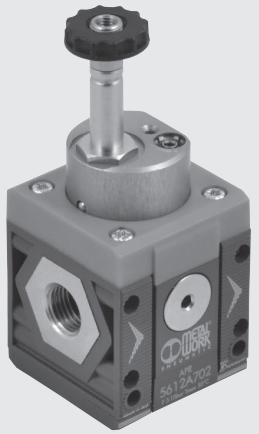
N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

Code	Description
Syntesi® SY1 SHUT-OFF VALVE	
5U10V100	V3V SY1 manual NPT without bushings
5U11V101	V3V SY1 1/8 manual NPT
5U12V102	V3V SY1 1/4 manual NPT
5U13V103	V3V SY1 3/8 manual NPT
5U10V200	V3V SY1 pneumatic NPT without bushings
5U11V201	V3V SY1 1/8 pneumatic NPT
5U12V202	V3V SY1 1/4 pneumatic NPT
5U13V203	V3V SY1 3/8 pneumatic NPT
5U10V300	V3V SY1 solenoid pilot-assisted NPT without bushings
5U11V301	V3V SY1 1/8 solenoid pilot-assisted NPT
5U12V302	V3V SY1 1/4 solenoid pilot-assisted NPT
5U13V303	V3V SY1 3/8 solenoid pilot-assisted NPT
5U10V700	V3V SY1 solenoid NPT without bushings
5U11V701	V3V SY1 1/8 solenoid NPT
5U12V702	V3V SY1 1/4 solenoid NPT
5U13V703	V3V SY1 3/8 solenoid NPT

Code	Description
Syntesi® SY2 SHUT-OFF VALVE	
5U20V100	V3V SY2 manual NPT without bushings
5U23V103	V3V SY2 3/8 manual NPT
5U24V104	V3V SY2 1/2 manual NPT
5U25V105	V3V SY2 3/4 manual NPT
5U26V106	V3V SY2 1 manual NPT
5U20V200	V3V SY2 pneumatic NPT without bushings
5U23V203	V3V SY2 3/8 pneumatic NPT
5U24V204	V3V SY2 1/2 pneumatic NPT
5U25V205	V3V SY2 3/4 pneumatic NPT
5U26V206	V3V SY2 1 pneumatic NPT
5U20V300	V3V SY2 solenoid pilot-assisted Cnomo NPT without bushings
5U23V303	V3V SY2 3/8 solenoid pilot-assisted Cnomo NPT
5U24V304	V3V SY2 1/2 solenoid pilot-assisted Cnomo NPT
5U25V305	V3V SY2 3/4 solenoid pilot-assisted Cnomo NPT
5U26V306	V3V SY2 1 solenoid pilot-assisted Cnomo NPT
5U20V700	V3V SY2 solenoid NPT without bushings
5U23V703	V3V SY2 3/8 solenoid NPT
5U24V704	V3V SY2 1/2 solenoid NPT
5U25V705	V3V SY2 3/4 solenoid NPT
5U26V706	V3V SY2 1 solenoid NPT

NOTES

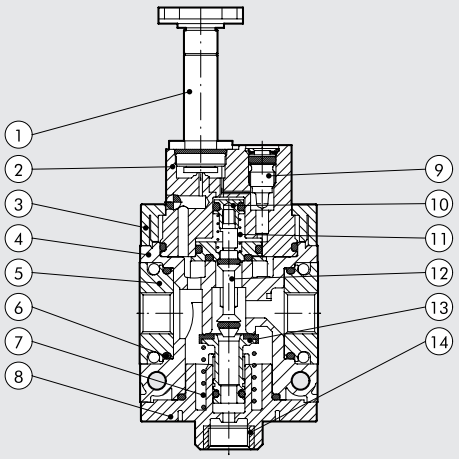
The progressive starter is a pneumatic component that allows air enter the circuit gradually, thereby avoiding excessive pressure bursts.
A sophisticated system of internal valves allows two separate stages of operation. During the first stage, a quantity of air that can be regulated via a pin flows from the APR. The second stage starts when the downstream pressure reached 40÷60% of the upstream pressure, during which full-port flow is achieved. When the mechanism is deactivated, the air flow is cut off and the downstream circuit is relieved.
The progressive starter is particularly useful on machinery where it is important to prevent actuators from moving rapidly and out of control, or where, for safety reasons, the air in-feed needs to be gentle and gradual. It, however, there is a major leak in the downstream system, it may never be possible to achieve the pressure required to open the valve completely.



TECHNICAL DATA		APR SY1			APR SY2			
Threaded port		1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Threaded discharge port		1/8" NPT			1/4" NPT			
Type of control		Solenoid			Solenoid - Cnomo solenoid			
Inlet pressure	bar	3 - 10			3 - 10			
	MPa	0.3 - 1			0.3 - 1			
	psi	43 - 145			43 - 145			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 0.5 bar (0.05 MPa; 7.25 psi)	Nl/min	900	1000	1100	2800	3600	3600	
	scfm	32	39	39	99	127	127	
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	1250	1500	1600	4400	4800	4800	
	scfm	44	53	57	156	170	170	
Drain flow rate at 6.3 bar (0.63 MPa; 91 psi)	Nl/min	500			2700			
	scfm	18			96			
Maximum flow rate start-up, at 6.3 bar (0.63 MPa; 91 psi)	Nl/min	170			700			
with regulation pin completely unscrewed	scfm	6			25			
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			
Weight	pounds	0.45	0.44	0.42	1.1	1.09	1.04	1.01
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			1500			
(0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	scfm	18			53			
Wall fixing screws		N. 8-32 unc x 2			N. 10-24 unc x 2			
Bobbin capacity	W	12 VDC and 24 VDC = 2W; 24 VAC, 110 VAC and 220 VAC = 3.5 VA						
		for Cnomo versions: 24 VDC = 4W; 24 VAC, 110 VAC, 220 VAC = 4 VA						
Manual control		Bistable: horizontal = OFF, vertical = ON						

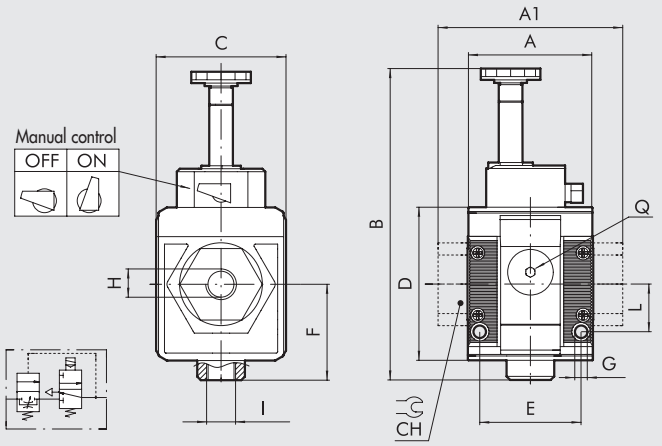
COMPONENTS

① Sleeve ø8 mm
② Anodized aluminium upper block
③ Technopolymer flange
④ Technopolymer body
⑤ IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium
⑥ O-ring NBR gasket
⑦ Stainless steel valve spring
⑧ Technopolymer bottom plug
⑨ OT58 brass progressive start regulation pin
⑩ OT58 brass internal valve
⑪ Stainless steel spring stem recoveryng
⑫ OT58 brass stem
⑬ OT58 brass main valve with vulcanized gasket
⑭ OT58 brass threaded insert

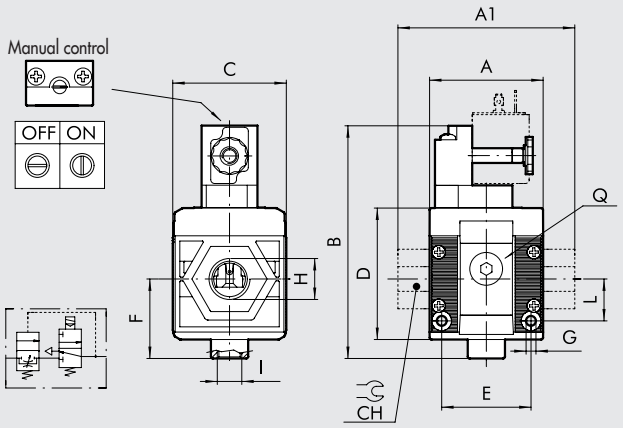


DIMENSIONS

SOLENOID **SY1-SY2**



CNOMO SOLENOID **SY2**



		SOLENOID SIZE 1			SOLENOID / CNOMO SOLENOID SIZE 2			
H (threaded port)	**NPT**	1/8″	1/4″	3/8″	3/8″	1/2″	3/4″	1″
A			1.65			2.4		
A1		-	-	1.73	-	-	3.74	3.74
B			4.14			5.16		
	Cnomo		-			4.92		
C			1.73			2.4		
CH			-		-	-	1.26	1.41
D			2.03			2.77		
E			1.32			1.87		
F			1.02			1.68		
G			0.165			0.21		
I (exhaust)			1/8″ NPT			1/4″ NPT		
L			0.63			0.89		
Q (no. 2 additional air takes-off)			1/8″ BSPP			1/4″ BSPP		

KEY TO CODES

5U	1	1	A	70	1
SYNTESI	**SIZE**	**THREADED INPUT CONNECTION**	**ELEMENT**	**TYPE**	**THREADED OUTPUT CONNECTION**
5U Syntesi NPT	**1** Size 1	**0** Without bushing **1** 1/8″ NPT port **2** 1/4″ NPT port **3** 3/8″ NPT port	**A** Progressive starter APR	**70** Solenoid * **71** Cnomo solenoid	**0** Without bushing **1** 1/8″ NPT port **2** 1/4″ NPT port **3** 3/8″ NPT port
	2 Size 2	**0** Without bushing **3** 3/8″ NPT port **4** 1/2″ NPT port **5** 3/4″ NPT port **6** 1″ NPT port			**0** Without bushing **3** 3/8″ NPT port **4** 1/2″ NPT port **5** 3/4″ NPT port **6** 1″ NPT port

* Only for size 2

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

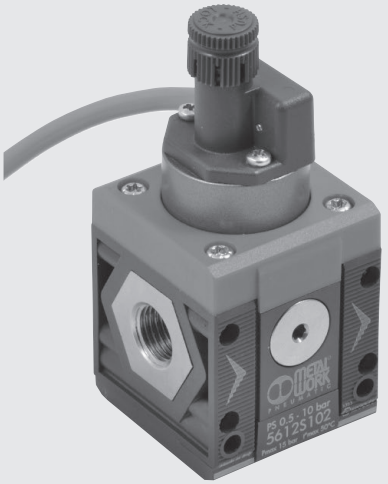
N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

Code	Description
Syntesi® SY1 PROGRESSIVE STARTER	
5U10A700	APR SY1 solenoid NPT without bushings
5U11A701	APR SY1 1/8 solenoid NPT
5U12A702	APR SY1 1/4 solenoid NPT
5U13A703	APR SY1 3/8 solenoid NPT

Code	Description
Syntesi® SY2 PROGRESSIVE STARTER	
5U20A700	APR SY2 solenoid NPT without bushings
5U23A703	APR SY2 3/8 solenoid NPT
5U24A704	APR SY2 1/2 solenoid NPT
5U25A705	APR SY2 3/4 solenoid NPT
5U26A706	APR SY2 1 solenoid NPT

Code	Description
Syntesi® SY2 PROGRESSIVE STARTER	
5U20A710	APR SY2 Cnomo solenoid NPT without bushings
5U23A713	APR SY2 3/8 Cnomo solenoid NPT
5U24A714	APR SY2 1/2 Cnomo solenoid NPT
5U25A715	APR SY2 3/4 Cnomo solenoid NPT
5U26A716	APR SY2 1 Cnomo solenoid NPT

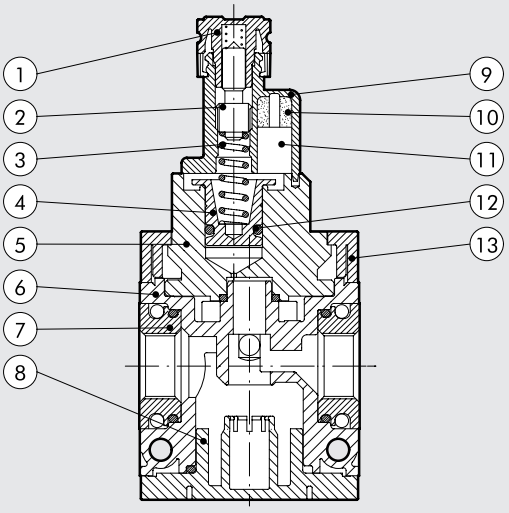
Syntesi® pressure switches feature a high degree of miniaturisation and a modern attractive design.
As they are extremely modular, the Syntesi® series can be installed facing up or down.
They come ready assembled with a 78.8 inch cable or an M8 connector with a 11.8 inch cable.
The contact is the switching type, which means it can be normally open or normally closed.
It can be regulated via a knurled push-lock handle.
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 or as an additional air intake.



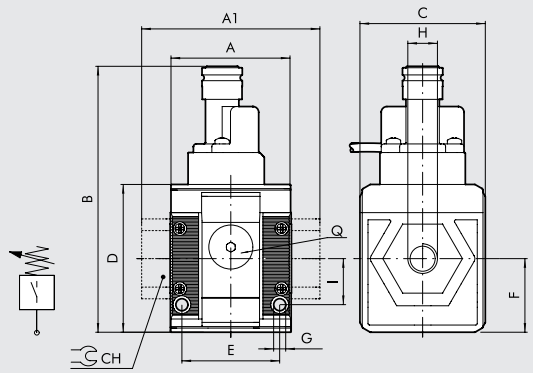
TECHNICAL DATA		SY1 PRESSURE SWITCHES			SY2 PRESSURE SWITCHES			
Threaded port		1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Adjustable pressure interval	psi	From 7 to 145			From 7 to 145			
Hysteresis (not adjustable)	psi	From 5.8 to 11.6 (See diagram)						
Maximum pressure	bar	15			13			
	MPa	1.5			1.3			
	psi	217			188			
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			
Maximum current	A	2			2			
Maximum voltage	V	250			250			
Outside diameter of cable	in	0.19			0.19			
Number of wires and cross section		3 x 0.5 mm^2			3 x 0.5 mm^2			
Contacts		Normally-Open (NO) and Normally-Closed (NC)						
Protection		IP65			IP65			
Number of switchings		5 x 10^6			5 x 10^6			
Fluid		Filtered lubricated or unlubricated compressed air. Lubrication, if used, must be continuous						
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			1500			
(0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	scfm	18			53			
Wall fixing screws		N. 8-32 unc x 2			N. 10-24 unc x 2			
Weight	pounds	0.57	0.55	0.54	0.97	0.92	0.9	0.88

COMPONENTS

① Technopolymer adjusting "push lock" handle
② OT58 brass adjusting screw
③ Steel piston spring
④ OT58 brass piston
⑤ Aluminium top plug
⑥ Technopolymer body
⑦ IN/OUT bushing made of OT58 nickel-plated brass or passivated aluminium
⑧ Technopolymer bottom plug
⑨ Technopolymer pressure switch body
⑩ Resin finish for IP65
⑪ Electrical contact
⑫ O-ring NBR gasket
⑬ Technopolymer flange

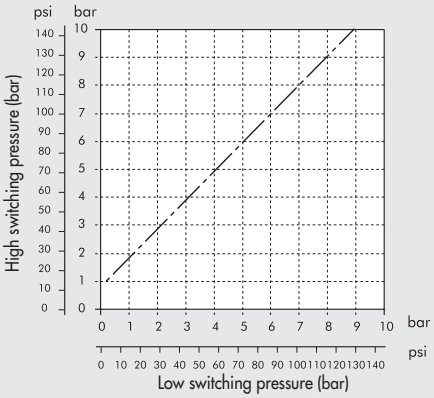


DIMENSIONS



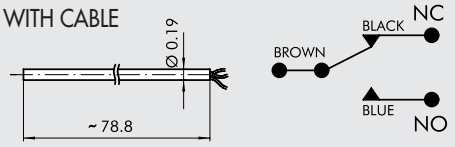
		SIZE 1			SIZE 2			
H (threaded port)	NPT	1/8″	1/4″	3/8″	3/8″	1/2″	3/4″	1″
A		1.65			2.4			
A1		-	-	1.73	-	-	3.74	3.74
B		3.67			3.98			
C		1.73			2.4			
CH		-			-	-	1.26	1.41
D		2.03			2.77			
E		1.32			1.87			
F		1.02			1.28			
G		0.165			0.21			
I		0.63			0.89			
Q (no. 2 additional air takes-off)		1/8″ BSPP			1/4″ BSPP			

HYSTERESIS GRAPH

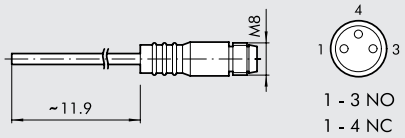


WIRING DIAGRAM

VERSION WITH CABLE



VERSION WITH M8 CONNECTOR



KEY TO CODES

5U	1	1	S	10	1
SYNTESI	**SIZE**	**THREADED INPUT CONNECTION**	**ELEMENT**	**TYPE**	**THREADED OUTPUT CONNECTION**
5U Syntesi NPT	**1** Size 1	**0** Without bushing **1** 1/8″ NPT port **2** 1/4″ NPT port **3** 3/8″ NPT port	**S** Pressure switches	**10** 78.8 inch cable **20** 11.8 inch cable with M8 connector	**0** Without bushing **1** 1/8″ NPT port **2** 1/4″ NPT port **3** 3/8″ NPT port
	2 Size 2	**0** Without bushing **3** 3/8″ NPT port **4** 1/2″ NPT port **5** 3/4″ NPT port **6** 1″ NPT port			**0** Without bushing **3** 3/8″ NPT port **4** 1/2″ NPT port **5** 3/4″ NPT port **6** 1″ NPT port

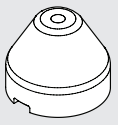
PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

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

Code	Descrizione
Syntesi® SY1 PRESSURE SWITCHES	
5U10S100	Pressure switch 78.8 inch cable SY1 NPT without bushings
5U11S101	Pressure switch 78.8 inch cable SY1 1/8 NPT
5U12S102	Pressure switch 78.8 inch cable SY1 1/4 NPT
5U13S103	Pressure switch 78.8 inch cable SY1 3/8 NPT
5U10S200	Pressure switch M8 connector SY1 NPT without bushings
5U11S201	Pressure switch M8 connector SY1 1/8 NPT
5U12S202	Pressure switch M8 connector SY1 1/4 NPT
5U13S203	Pressure switch M8 connector SY1 3/8 NPT

Code	Description
Syntesi® SY2 PRESSURE SWITCHES	
5U20S100	Pressure switch 78.8 inch cable SY2 NPT without bushings
5U23S103	Pressure switch 78.8 inch cable SY2 3/8 NPT
5U24S104	Pressure switch 78.8 inch cable SY2 1/2 NPT
5U25S105	Pressure switch 78.8 inch cable SY2 3/4 NPT
5U26S106	Pressure switch 78.8 inch cable SY2 1 NPT
5U20S200	Pressure switch M8 connector SY2 NPT without bushings
5U23S203	Pressure switch M8 connector SY2 3/8 NPT
5U24S204	Pressure switch M8 connector SY2 1/2 NPT
5U25S205	Pressure switch M8 connector SY2 3/4 NPT
5U26S206	Pressure switch M8 connector SY2 1 NPT

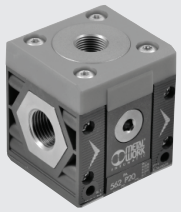
ACCESSOIRES: SECURITY KNOB



Code	Description
9200703	Security knob

NOTE: Pull outwards to remove the knob from the pressure switch on the unit. Insert the security knob and regulate the pressure switch. Then press the handle firmly to lock it in position. If the pressure switch needs to be reset, remove the security knob by forcing it laterally with a screwdriver.

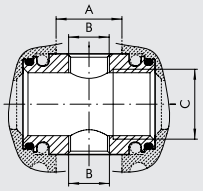
The air take-off is a connecting element that is mounted between two Syntesi® modules. The 2-way version, made of metal and having restrained dimensions, has a threaded port upwards and one downwards. The 4-way version, in technopolymer, has a threaded port on each side. This gives or four additional air outlets for use as required. All Syntesi® modules come with two threaded ports, one on the front and one on the back, for use as air take-off.



TECHNICAL DATA

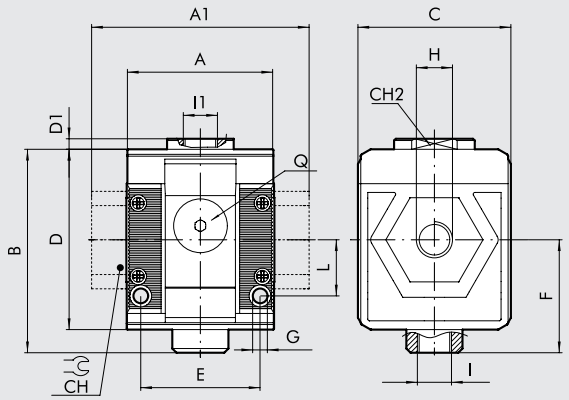
		AIR TAKE-OFF		AIR INTAKE, 4-WAY	
		SIZE 1	SIZE 2	SIZE 1	SIZE 2
Flow rate of the air take-off at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	1550	7000	500 - 2000	1500 - 4500
	scfm	55	248	18 - 71	53 - 160
Usage temperature and pressure		Given by the Syntesi® modules it's connected to			
Weight	pounds	0.14	0.17	0.22	0.68
Fluid		Compressed air or other inert gases			

DIMENSIONS 2 WAY-VERSION



	SIZE 1	SIZE 2
A	0.62	1.06
B	1/8" NPT	3/8" NPT
C	3/8" NPT	1/2" NPT

DIMENSIONS 4 WAY-VERSION



		SIZE 1			SIZE 2			
H (threaded port)	NPT	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
A		1.65			2.4			
A1		-	-	1.73	-	-	3.74	3.74
B		2.28			3.19			
C		1.73			2.4			
CH		-			-	-	1.26	1.41
CH2		3/4			-			
D		2.03			2.77			
D1		0.19			-			
E		1.32			1.87			
F		1.02			1.68			
G		0.165			0.21			
I		1/8" NPT			1/4" NPT			
I1		1/4" NPT			3/8" NPT			
L		0.63			0.89			
Q (no. 2 add. air takes-off)		1/8" BSPP			1/4" BSPP			

KEY TO CODE FOR 4-WAY VERSION

5U	1	1	P	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	TYPE	THREADED OUTPUT CONNECTION
5U Syntesi NPT	1 Size 1	0 Without bushing 1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port	P Air take-off	20 4-way	0 Without bushing 1 1/8" NPT port 2 1/4" NPT port 3 3/8" NPT port
	2 Size 2	0 Without bushing 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port			0 Without bushing 3 3/8" NPT port 4 1/2" NPT port 5 3/4" NPT port 6 1" NPT port

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

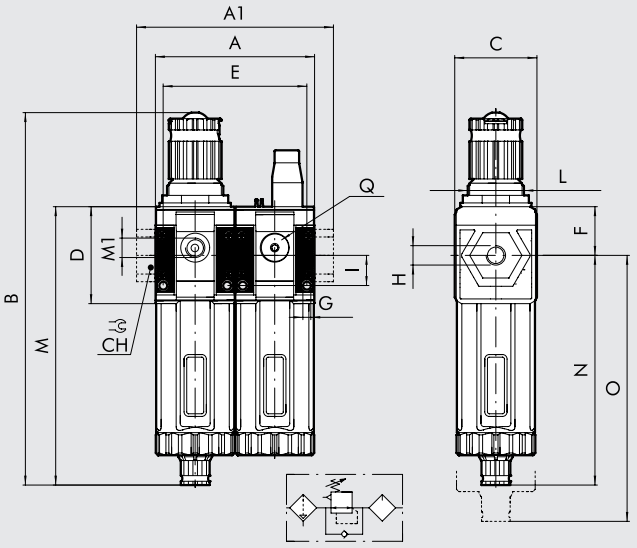
PURCHASE ORDER CODES HAVING A MORE FREQUENT USE CODES

Code	Description
AIR INTAKE, 2-way version	
5U10P100	PA SY1 NPT
5U20P100	PA SY2 NPT
AIR INTAKE, 4-way version	
5U10P200	PA 4-way SY1 NPT without bushing
5U11P201	PA 4-way SY1 1/8 NPT
5U12P202	PA 4-way SY1 1/4 NPT
5U13P203	PA 4-way SY1 3/8 NPT
5U20P200	PA 4-way SY2 NPT without bushing
5U23P203	PA 4-way SY2 3/8 NPT
5U24P204	PA 4-way SY2 1/2 NPT
5U25P205	PA 4-way SY2 3/4 NPT
5U26P206	PA 4-way SY2 1 NPT

For full details and list of components refer to the sections about filter-regulator and the lubricator.

TECHNICAL DATA		FR + LUB SY1			FR + LUB SY2			
Threaded port		1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1"NPT
Degree of filtration	µm	yellow: 5 (200 microinch) - output air purity class ISO8573-1: 3.7.-						
		white: 20 (790 microinch) - output air purity class ISO8573-1: 4.7.-						
		blue: 50 (2000 microinch) - output air purity class ISO8573-1: 5.7.-						
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	350			1200			
(Inlet pressure 10 bar; 1 MPa; 145 psi)	scfm	12			42.5			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	1400			4000			
(Inlet pressure 10 bar; 1 MPa; 145 psi)	scfm	50			141.5			
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			
Padlockable knob		Included						
Upstream pressure compensation		Included, via balanced valve						
Weight	pounds	0.92	0.91	0.89	2.37	2.31	2.30	2.27
Fluid		Compressed air or other inert gases						
Mounting position		Vertical			Vertical			
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 (FR)- 450 (LUB)			1400 (FR) - 800 (LUB)			
(0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	scfm	18 (FR) - 16 (LUB)			49.5 (FR) - 28 (LUB)			
Filter cup capacity (condensate)	fluid ounce oz	1.02			2.37			
Quantity of filled oil	fluid ounce oz	2.03			4.40			
Condensate drain		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure						
		RA: automatic drain with condensate discharge, independent of pressure and flow rate						
		Note: the maximum input pressure for the RA version must not exceed 145 psi						
Recommended oils		ISO and UNI FD22 (Energol HPL; Spinesso; Mobil DTE; Tellus oil)						
Wall fixing screws		N. 8-32 unc x 2			N. 10-24 unc x 2			

DIMENSIONS



		SIZE 1			SIZE 2			
H (threaded port)	NPT	1/8″	1/4″	3/8″	3/8″	1/2″	3/4″	1″
A		3.31			4.8			
A1		-	-	3.39	-	-	6.14	6.14
B	RMSA	7.60			9.68			
	RA	7.95			9.84			
C		1.73			2.4			
CH		-			-	-	1.26	1.41
D		2.03			2.77			
E		2.97			4.25			
F		1.08			1.5			
G		0.165			0.21			
I		0.63			0.89			
L		M30x1.5			M38x2			
M	RMSA	5.83			7			
	RA	5.99			7.16			
M1 (pressure gauge port)		1/8″ BSPP			1/4″ BSPP			
N	RMSA	4.82			5.5			
	RA	4.97			5.66			
O	RMSA	7.95			9.65			
	RA	8.11			9.8			
Q (no. 2 additional air takes-off)		1/8″ BSPP			1/4″ BSPP			

KEY TO CODES

5U	1	1	B	24	L	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	DEGREE OF FILTRATION, TYPE OF CONDENSATE DRAIN AND SETTING RANGE	ELEMENT	OIL FILLING	THREADED OUTPUT CONNECTION
5U Syntesi NPT	**1** Size 1	**1** 1/8″ NPT port **2** 1/4″ NPT port **3** 3/8″ NPT port	**B** Filter-regulator	**10** 5 µm (200 microinch), RMSA, 0 - 30 psi **20** 20 µm (790 microinch), RMSA, 0 - 30 psi **30** 50 µm (2000 microinch), RMSA, 0 - 30 psi **40** 5 µm (200 microinch), RA, 0 - 30 psi **50** 20 µm (790 microinch), RA, 0 - 30 psi **60** 50 µm (2000 microinch), RA, 0 - 30 psi **12** 5 µm (200 microinch), RMSA, 0 - 60 psi **22** 20 µm (790 microinch), RMSA, 0 - 60 psi **32** 50 µm (2000 microinch), RMSA, 0 - 60 psi **42** 5 µm (200 microinch), RA, 0 - 60 psi **52** 20 µm (790 microinch), RA, 0 - 60 psi **62** 50 µm (2000 microinch), RA, 0 - 60 psi **14** 5 µm (200 microinch), RMSA, 0 - 120 psi **24** 20 µm (790 microinch), RMSA, 0 - 120 psi **34** 50 µm (2000 microinch), RMSA, 0 - 120 psi **44** 5 µm (200 microinch), RA, 0 - 120 psi **54** 20 µm (790 microinch), RA, 0 - 120 psi **64** 50 µm (2000 microinch), RA, 0 - 120 psi **16** 5 µm (200 microinch), RMSA, 0 - 180 psi **26** 20 µm (790 microinch), RMSA, 0 - 180 psi **36** 50 µm (2000 microinch), RMSA, 0 - 180 psi **46** 5 µm (200 microinch), RA, 0 - 180 psi **56** 20 µm (790 microinch), RA, 0 - 180 psi **66** 50 µm (2000 microinch), RA, 0 - 180 psi	**L** Lubricator	**10** Manual filling from the top	**1** 1/8″ NPT port **2** 1/4″ NPT port **3** 3/8″ NPT port **4** 1/2″ NPT port **5** 3/4″ NPT port **6** 1″ NPT port
	2 Size 2	**3** 3/8″ NPT port **4** 1/2″ NPT port **5** 3/4″ NPT port **6** 1″ NPT port					

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.

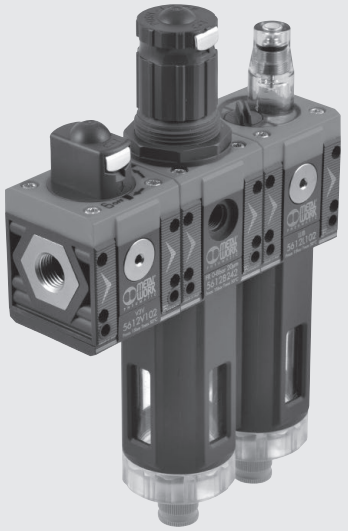
RA: automatic drain with condensate discharge, independent of pressure and flow rate.

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.

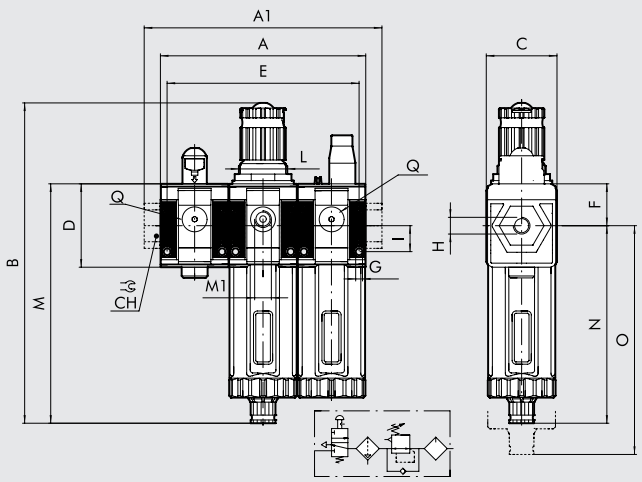
Code	Description	Code	Description	Code	Description
FR + LUB Syntesi® SY1		**FR + LUB Syntesi® SY2**		**FR + LUB Syntesi® SY2**	
5U11B24L101	FR+LUB SY1 1/8 20 0-120 RMSA NPT	**5U23B24L103**	FR+LUB SY2 3/8 20 0-120 RMSA NPT	**5U26B24L106**	FR+LUB SY2 1 20 0-120 RMSA NPT
5U11B54L101	FR+LUB SY1 1/8 20 0-120 RA NPT	**5U23B54L103**	FR+LUB SY2 3/8 20 0-120 RA NPT	**5U26B54L106**	FR+LUB SY2 1 20 0-120 RA NPT
5U12B24L102	FR+LUB SY1 1/4 20 0-120 RMSA NPT	**5U24B24L104**	FR+LUB SY2 1/2 20 0-120 RMSA NPT		
5U12B54L102	FR+LUB SY1 1/4 20 0-120 RA NPT	**5U24B54L104**	FR+LUB SY2 1/2 20 0-120 RA NPT		
5U13B24L103	FR+LUB SY1 3/8 20 0-120 RMSA NPT	**5U25B24L105**	FR+LUB SY2 3/4 20 0-120 RMSA NPT		
5U13B54L103	FR+LUB SY1 3/8 20 0-120 RA NPT	**5U25B54L105**	FR+LUB SY2 3/4 20 0-120 RA NPT		

For full details and list of components refer to the sections about shut-off valve, filter-regulator and lubricator.



TECHNICAL DATA		V3V + FR + LUB SY1			V3V + FR + LUB SY2			
Threaded port		1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Degree of filtration	µm	yellow: 5 (200 microinch) - output air purity class ISO8573-1: 3.7.-						
		white: 20 (790 microinch) - output air purity class ISO8573-1: 4.7.-						
		blue: 50 (2000 microinch) - output air purity class ISO8573-1: 5.7.-						
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	250			1200			
(Inlet pressure 10 bar; 1 MPa; 145 psi)	scfm	9			42.5			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	1050			4000			
(Inlet pressure 10 bar; 1 MPa; 145 psi)	scfm	37			141.5			
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			Included			
Drain flow rate at 6.3 bar (0.63 MPa; 91 psi)	Nl/min	500			2000			
	scfm	18			71			
Padlockable knob		Included with both V3V and regulator						
Upstream pressure compensation		Included, via balanced valve						
Weight	pounds	1.32	1.32	1.29	3.26	3.2	3.19	3.17
Fluid		Compressed air or other inert gases						
Mounting position		Vertical			Vertical			
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 (V3V) -500 (FR)- 450 (LUB)			1500 (V3V) - 1400 (FR) - 800 (LUB)			
(0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	scfm	18 (V3V) - 18 (FR) - 16 (LUB)			53 (V3V) - 49.5 (FR) - 28 (LUB)			
Filter cup capacity	fluid ounce oz	1.02			2.37			
Quantity of filled oil	fluid ounce oz	2.03			4.40			
Condensate drain		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure						
		RA: automatic drain with condensate discharge, independent of pressure and flow rate						
		Note: the maximum input pressure for the RA version must not exceed 145 psi						
Recommended oils		ISO and UNI FD22 (Energol HPL; Spinesso; Mobil DTE; Tellus oil)						
Wall fixing screws		N. 8-32 unc x 2			N. 10-24 unc x 2			

OVERALL DIMENSIONS



		SIZE 1			SIZE 2			
H (threaded port)	NPT	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
A		4.97			5.04			
A1		-	-	5.04	-	-	8.54	8.54
B	RMSA	7.60			9.68			
	RA	7.95			9.84			
C		1.73			2.4			
CH		-			-	-	1.26	1.41
D		2.03			2.77			
E		4.61			6.63			
F		1.08			1.5			
G		0.165			0.21			
I		0.63			0.89			
L		M30x1.5			M38x2			
M	RMSA	5.83			7			
	RA	5.99			7.16			
M1 (pressure gauge port)		1/8" BSPP			1/4" BSPP			
N	RMSA	4.82			5.5			
	RA	4.97			5.66			
O	RMSA	7.95			9.65			
	RA	8.11			9.8			
Q (no. 2 additional air takes-off)		1/8" BSPP			1/4" BSPP			

KEY TO CODES

5U	1	1	V	10	B	24	L	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	TYPE	ELEMENT	DEGREE OF FILTRATION, TYPE OF CONDENSATE DRAIN AND SETTING RANGE	ELEMENT	OIL FILLING	THREADED OUTPUT CONNECTION
5U Syntesi NPT	**1** Size 1	**1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port	**V** V3V	**10** Manual	**B** Filter-regulator	**10** 5 µm (200 microinch), RMSA, 0 - 30 psi **20** 20 µm (790 microinch), RMSA, 0 - 30 psi **30** 50 µm (2000 microinch), RMSA, 0 - 30 psi **40** 5 µm (200 microinch), RA, 0 - 30 psi **50** 20 µm (790 microinch), RA, 0 - 30 psi **60** 50 µm (2000 microinch), RA, 0 - 30 psi **12** 5 µm (200 microinch), RMSA, 0 - 60 psi **22** 20 µm (790 microinch), RMSA, 0 - 60 psi **32** 50 µm (2000 microinch), RMSA, 0 - 60 psi **42** 5 µm (200 microinch), RA, 0 - 60 psi **52** 20 µm (790 microinch), RA, 0 - 60 psi **62** 50 µm (2000 microinch), RA, 0 - 60 psi **14** 5 µm (200 microinch), RMSA, 0 - 120 psi **24** 20 µm (790 microinch), RMSA, 0 - 120 psi **34** 50 µm (2000 microinch), RMSA, 0 - 120 psi **44** 5 µm (200 microinch), RA, 0 - 120 psi **54** 20 µm (790 microinch), RA, 0 - 120 psi **64** 50 µm (2000 microinch), RA, 0 - 120 psi **16** 5 µm (200 microinch), RMSA, 0 - 180 psi **26** 20 µm (790 microinch), RMSA, 0 - 180 psi **36** 50 µm (2000 microinch), RMSA, 0 - 180 psi **46** 5 µm (200 microinch), RA, 0 - 180 psi **56** 20 µm (790 microinch), RA, 0 - 180 psi **66** 50 µm (2000 microinch), RA, 0 - 180 psi	**L** Lubricator	**10** Manual filling from the top	**1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port **3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port
	2 Size 2	**3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port							

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.
RA: automatic drain with condensate discharge, independent of pressure and flow rate.

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

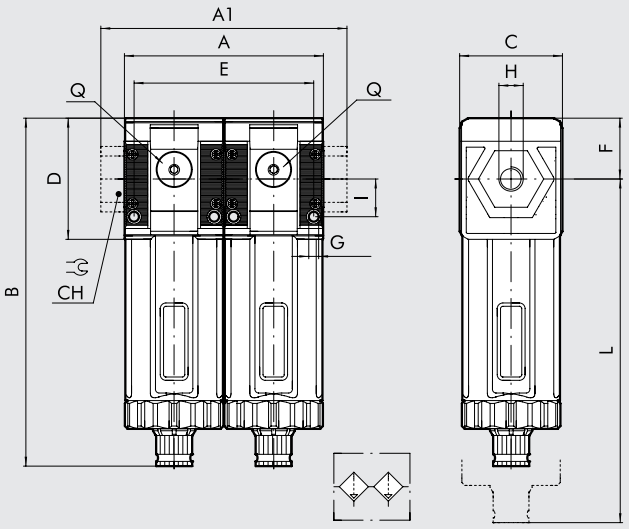
N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

Code	Description	Code	Description	Code	Description
V3V + FR + LUB Syntesi® SY1		**V3V + FR + LUB Syntesi® SY2**		**V3V + FR + LUB Syntesi® SY2**	
5U11V10B24L101	V3V+FR+LUB SY1 1/8 20 0-120 RMSA NPT	**5U23V10B24L103**	V3V+FR+LUB SY2 3/8 20 0-120 RMSA NPT	**5U26V10B24L106**	V3V+FR+LUB SY2 1 20 0-120 RMSA NPT
5U11V10B54L101	V3V+FR+LUB SY1 1/8 20 0-120 RA NPT	**5U23V10B54L103**	V3V+FR+LUB SY2 3/8 20 0-120 RA NPT	**5U26V10B54L106**	V3V+FR+LUB SY2 1 20 0-120 RA NPT
5U12V10B24L102	V3V+FR+LUB SY1 1/4 20 0-120 RMSA NPT	**5U24V10B24L104**	V3V+FR+LUB SY2 1/2 20 0-120 RMSA NPT		
5U12V10B54L102	V3V+FR+LUB SY1 1/4 20 0-120 RA NPT	**5U24V10B54L104**	V3V+FR+LUB SY2 1/2 20 0-120 RA NPT		
5U13V10B24L103	V3V+FR+LUB SY1 3/8 20 0-120 RMSA NPT	**5U25V10B24L105**	V3V+FR+LUB SY2 3/4 20 0-120 RMSA NPT		
5U13V10B54L103	V3V+FR+LUB SY1 3/8 20 0-120 RA NPT	**5U25V10B54L105**	V3V+FR+LUB SY2 3/4 20 0-120 RA NPT		

For full details and list of components refer to the sections about filter and depurator.

TECHNICAL DATA		FIL + DEP SY1			FIL + DEP SY2			
Threaded port		1/8" NPT	1/4" NPT	3/8" NPT	3/8" NPT	1/2" NPT	3/4" NPT	1" NPT
Purifier degree of filtration	µm	0.01 - output air purity class ISO8573-1: 1.7.2						
Filter degree of filtration	µm	yellow: 5 (200 microinch)						
Max. inlet pressure	bar	15			13			
	MPa	1.5			1.3			
	psi	217			188			
Suggested flow rate at 6.3 bar (0.63 MPa; 91 psi)	Nl/min	550			1050			
	scfm	9			37			
Maximun suggested flow rate		Look a the chart on the depurator page 2-12			Look a the chart on the depurator page 2-12 / 2-13			
		NB: flow rates higher than the recommended value reduces purification efficiency						
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			
Weight	pounds	0.79	0.78	0.76	2.1	2.02	2.01	1.98
Purifier condensate drain		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure						
Filter condensate drain		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure						
		RA: automatic drain with condensate discharge, independent of pressure and flow rate						
		Note: the maximum input pressure for the RA version must not exceed 145 psi						
Fluid		Compressed air or other inert gases						
Cup capacity filter/depurator	fluid ounce oz	1.02/0.51			2.37/1.35			
Mounting position		Vertical			Vertical			
Port for additional air take-off		1/8" BSPP, front and rear			1/4" BSPP, front and rear			
Additional air take-off flow rate (not purified air)	Nl/min	500			1500			
at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	scfm	18			53			
Wall fixing screws		N. 8-32 unc x 2			N. 10-24 unc x 2			

DIMENSIONS



		SIZE 1			SIZE 2			
H (threaded port)	NPT	1/8″	1/4″	3/8″	3/8″	1/2″	3/4″	1″
A		3.31			4.8			
A1		-	-	3.39	-	-	6.14	6.14
B	RMSA	5.83			7			
	RA	5.99			7.16			
C		1.73			2.4			
CH		-			-	-	1.26	1.41
D		2.03			2.77			
E		2.97			4.25			
F		1.08			1.5			
G		0.165			0.21			
I		0.63			0.89			
L	RMSA	7.95			9.65			
	RA	8.11			9.8			
Q (no. 2 additional air takes-off)		1/8″ BSPP			1/4″ BSPP			

KEY TO CODES

5U	1	1	F	10	D	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	DEGREE OF FILTRATION AND TYPE OF CONDENSATE DRAIN	ELEMENT	TYPE	THREADED OUTPUT CONNECTION
5U Syntesi NPT	**1** Size 1	**1** 1/8″ NPT port **2** 1/4″ NPT port **3** 3/8″ NPT port	**F** Filter	**10** 5 µm (200 microinch), RMSA **40** 5 µm (200 microinch), RA	**D** Depurator	**10** RMSA	**1** 1/8″ NPT port **2** 1/4″ NPT port **3** 3/8″ NPT port
	2 Size 2	**3** 3/8″ NPT port **4** 1/2″ NPT port **5** 3/4″ NPT port **6** 1″ NPT port					**3** 3/8″ NPT port **4** 1/2″ NPT port **5** 3/4″ NPT port **6** 1″ NPT port

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.
RA: automatic drain with condensate discharge, independent of pressure and flow rate.

PURCHASE ORDER CODES HAVING A MORE FREQUENT USE

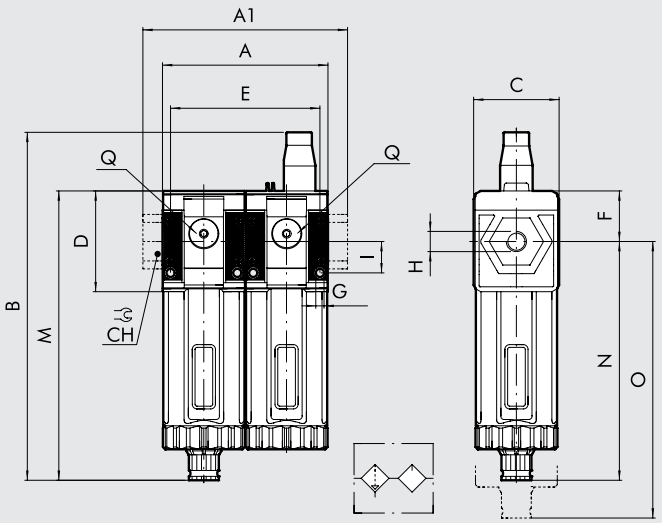
N.B. Besides the below mentioned codes, you can order elements composed at your will according to the key to codes.

Code	Description	Code	Description
FIL + DEP Syntesi® SY1		**FIL + DEP Syntesi® SY2**	
5U11F10D101	FIL+DEP SY1 1/8 5 RMSA NPT	**5U23F10D103**	FIL+DEP SY2 3/8 5 RMSA NPT
5U11F40D101	FIL+DEP SY1 1/8 5 RA NPT	**5U23F40D103**	FIL+DEP SY2 3/8 5 RA NPT
5U12F10D102	FIL+DEP SY1 1/4 5 RMSA NPT	**5U24F10D104**	FIL+DEP SY2 1/2 5 RMSA NPT
5U12F40D102	FIL+DEP SY1 1/4 5 RA NPT	**5U24F40D104**	FIL+DEP SY2 1/2 5 RA NPT
5U13F10D103	FIL+DEP SY1 3/8 5 RMSA NPT	**5U25F10D105**	FIL+DEP SY2 3/4 5 RMSA NPT
5U13F40D103	FIL+DEP SY1 3/8 5 RA NPT	**5U25F40D105**	FIL+DEP SY2 3/4 5 RA NPT
		5U26F10D106	FIL+DEP SY2 1 5 RMSA NPT
		5U26F40D106	FIL+DEP SY2 1 5 RA NPT

For full details and list of components refer to the sections about filter and lubricator.

TECHNICAL DATA		FIL + LUB SY1			FIL + LUB SY2			
Threaded port		1/8″ NPT	1/4″ NPT	3/8″ NPT	3/8″ NPT	1/2″ NPT	3/4″ NPT	1″ NPT
Degree of filtration	µm	yellow: 5 (200 microinch) - output air purity class ISO8573-1: 3.7.-						
		white: 20 (790 microinch) - output air purity class ISO8573-1: 4.7.-						
		blue: 50 (2000 microinch) - output air purity class ISO8573-1: 5.7.-						
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	860			2900			
	scfm	30			102.5			
Flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	Nl/min	1450			4400			
	scfm	51			156			
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			
Weight	pounds	0.77	0.76	0.78	1.85	1.79	1.78	1.75
Fluid		Compressed air or other inert gases						
Mounting position		Vertical			Vertical			
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 - 450			1500 - 800			
(0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14.5 psi)	scfm	18 - 16			53 - 28			
Filter cup capacity (condensate)	fluid ounce oz	1.02			2.37			
Quantity of filled oil	fluid ounce oz	2.03			4.40			
Condensate drain		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure						
		RA: automatic drain with condensate discharge, independent of pressure and flow rate						
		Note: the maximum input pressure for the RA version must not exceed 145 psi						
Recommended oils		ISO and UNI FD22 (Energol HPL; Spinesso; Mobil DTE; Tellus oil)						
Wall fixing screws		N. 8-32 unc x 2			N. 10-24 unc x 2			

DIMENSIONS



		SIZE 1			SIZE 2			
H (threaded port)	NPT	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
A		3.31			4.8			
A1		-	-	3.39	-	-	6.14	6.14
B		6.38			7.9			
C		1.73			2.4			
CH		-			-	-	1.26	1.41
D		2.03			2.77			
E		2.97			4.25			
F		1.08			1.5			
G		0.165			0.21			
I		0.63			0.89			
M	RMSA	5.83			7			
	RA	5.99			7.16			
N	RMSA	4.82			5.5			
	RA	4.97			5.66			
O	RMSA	7.95			9.65			
	RA	8.11			9.8			
Q (no. 2 additional air takes-off)		1/8" BSPP			1/4" BSPP			

KEY TO CODES

5U	1	1	F	10	L	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	DEGREE OF FILTRATION AND TYPE OF CONDENSATE DRAIN	ELEMENT	OIL FILLING	THREADED OUTPUT CONNECTION
5U Syntesi NPT	**1** Size 1	**1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port	**F** Filter	**10** 5 µm (200 microinch), RMSA **20** 20 µm (790 microinch), RMSA **30** 50 µm (2000 microinch), RMSA **40** 5 µm (200 microinch), RA **50** 20 µm (790 microinch), RA **60** 50 µm (2000 microinch), RA	**L** Lubricator	**10** Manual filling from the top	**1** 1/8" NPT port **2** 1/4" NPT port **3** 3/8" NPT port
	2 Size 2	**3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port					**3** 3/8" NPT port **4** 1/2" NPT port **5** 3/4" NPT port **6** 1" NPT port

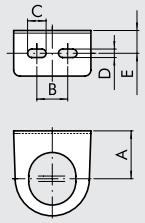
RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.
RA: automatic drain with condensate discharge, independent of pressure and flow rate.

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
FIL + LUB Syntesi® SY1		**FIL + LUB Syntesi® SY2**	
5U11F20L101	FIL+LUB SY1 1/8 20 RMSA NPT	**5U23F20L103**	FIL+LUB SY2 3/8 20 RMSA NPT
5U11F50L101	FIL+LUB SY1 1/8 20 RA NPT	**5U23F50L103**	FIL+LUB SY2 3/8 20 RA NPT
5U12F20L102	FIL+LUB SY1 1/4 20 RMSA NPT	**5U24F20L104**	FIL+LUB SY2 1/2 20 RMSA NPT
5U12F50L102	FIL+LUB SY1 1/4 20 RA NPT	**5U24F50L104**	FIL+LUB SY2 1/2 20 RA NPT
5U13F20L103	FIL+LUB SY1 3/8 20 RMSA NPT	**5U25F20L105**	FIL+LUB SY2 3/4 20 RMSA NPT
5U13F50L103	FIL+LUB SY1 3/8 20 RA NPT	**5U25F50L105**	FIL+LUB SY2 3/4 20 RA NPT
		5U26F20L106	FIL+LUB SY2 1 20 RMSA NPT
		5U26F50L106	FIL+LUB SY2 1 20 RA NPT

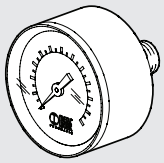
MOUNTING BRACKET FOR REG. AND FR



Code	Description
9200701	SF100- BIT-ND 1/4 - SY 1
9400701	SF200-ND-3/8 1/2 - SY2

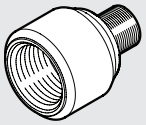
Code	A	B	C	D	E
9200701	1.22	0.79	0.48	0.22	0.58
9400701	1.66	1.59	0.47	0.22	0.59

PRESSURE GAUGES



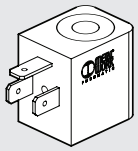
Code	Description
9700101	M 40 1/8 12 (0-180)
9700102	M 40 1/8 04 (0-60)
9800101	M 50 1/8 12 (0-180)
9800102	M 50 1/8 04 (0-60)
9900101	M 63 1/4 12 (0-180)

ADAPTERS FOR PRESSURE GAUGES (SY2)



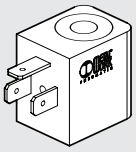
Code	Description
9210005	1/4 adapter for 1/8 pressure gauge

COIL FOR APR AND V3V ELPN



Code	Description
W0215000101	Coil 22 Ø 8 BA 2W-24VDC
W0215000111	Coil 22 Ø 8 BA 3.5VA-24VAC
W0215000121	Coil 22 Ø 8 BA 3.5VA-110VAC
W0215000131	Coil 22 Ø 8 BA 3.5VA-220VAC

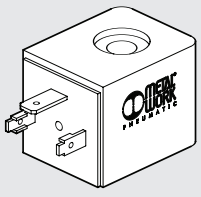
"UL" AND "CSA" COILS 22 mm FOR APR AND V3V ELPN



Code	Description
W0215000251	Coil 22 Ø 8 BA 2W-12VDC UR
W0215000201	Coil 22 Ø 8 BA 2W-24VDC UR
W0215000211	Coil 22 Ø 8 BA 3.5VA-24VAC UR
W0215000221	Coil 22 Ø 8 BA 3.5VA-110VAC UR
W0215000231	Coil 22 Ø 8 BA 3.5VA-220VAC UR

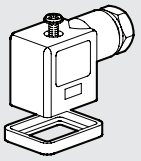
For the standards description look at page 5-4

COIL 30 mm FOR APR AND V3V ELPN



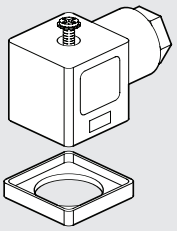
Code	Description
W0210010100	Coil 30 Ø 8 4W-24VDC
W0210011100	Coil 30 Ø 8 4VA-24VAC 50/60 HZ
W0210012100	Coil 30 Ø 8 4VA-110VAC 50/60 HZ
W0210013100	Coil 30 Ø 8 4VA-220VAC 50/60 HZ

ELECTRIC CONNECTOR 22 mm FOR APR AND V3V ELPN



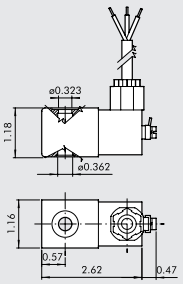
Code	Description
W0970510011	Connector standard
W0970510012	Connector 22 LED 24V
W0970510013	Connector 22 LED 110V
W0970510014	Connector 22 LED 220V
W0970510015	Connector 22 LED VDR 24V
W0970510016	Connector 22 LED VDR 110V
W0970510017	Connector 22 LED VDR 220V
W0970510070	Connector 22 standard ATEX

ELECTRIC CONNECTOR 30 mm FOR APR AND V3V ELPN



Code	Description
W0970520033	Connector 30 STD
W0970520034	Connector 30 LED 24V
W0970520035	Connector 30 LED 110V
W0970520036	Connector 30 LED 220V
W0970520037	Connector 30 LED VDR 24V
W0970520038	Connector 30 LED VDR 110V
W0970520039	Connector 30 LED VDR 220V

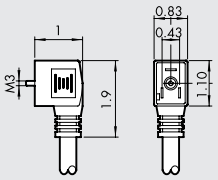
KIT FOR COIL EEXM



Code	Description
0227606913	Kit for coil 30 24 VDC EEXMT5 cable 118 inch
0227606915	Kit for coil 30 24 VDC EEXMT5 cable 197 inch
0227608013	Kit for coil 30 24 VAC EEXMT5 cable 118 inch
0227608015	Kit for coil 30 24 VAC EEXMT5 cable 197 inch
0227608023	Kit for coil 30 110 VAC EEXMT5 cable 118 inch
0227608025	Kit for coil 30 110 VAC EEXMT5 cable 197 inch
0227608033	Kit for coil 30 230 VAC EEXMT5 cable 118 inch
0227608035	Kit for coil 30 230 VAC EEXMT5 cable 197 inch

Bobine a normativa Atex 94/9 CE, gruppo II, categoria 2 GD

PRE WIRED DIN CONNECTORS 6 FEET CABLE 22 mm



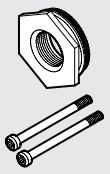
Code	Description
888776	DIN connector 110VAC led
888777	DIN connector standard black
888778	DIN connector 24VDC

KIT COIL SIDE 22 IP65

Code	Description
0222100100	Kit for coils 22 - IP65

Improved IP65 protection, even after prolonged exposure to atmospheric agents.

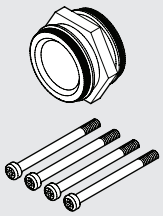
THREADED PORT



Code	Description
9210001U	Kit IN OUT 1/8 SY1 NPT
9210002U	Kit IN OUT 1/4 SY1 NPT
9210003U	Kit IN OUT 3/8 SY1 NPT
9210011U	Kit IN OUT 3/8 SY2 NPT
9210012U	Kit IN OUT 1/2 SY2 NPT
9210013U	Kit IN OUT 3/4 SY2 NPT
9210014U	Kit IN OUT 1 SY2 NPT

Max torque 0.3 lbf ft
Max torque 1.84 lbf ft

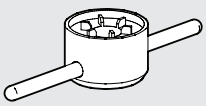
CONNECTING NIPPLE KIT



Code	Description
9210000	Connecting nipple kit SY1
9210010	Connecting nipple kit SY2

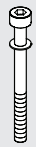
Max torque 0.3 lbf ft
Max torque 1.84 lbf ft

BOWL DISASSEMBLY SPANNER



Code	Description
9170601	CS TF - TL BIT/SY1
9210050	CS TF - TL SY2

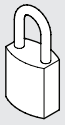
WALL-FIXING SCREW



Code	Description
9210030	M4x55 fixing screws SY1
9210031	M5x75 fixing screws SY2

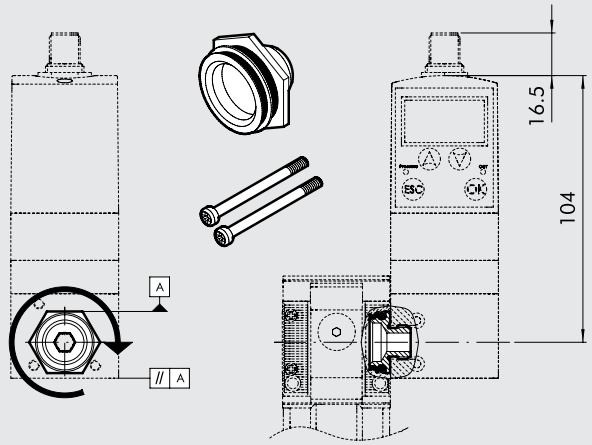
Max torque 0.59 lbf ft
Max torque 1.47 lbf ft

PADLOCK



Code	Description
9062401	Padlock

REGTRONIC CONNECTING KIT



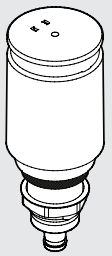
Code	Description
9210004	Adaptor for REGTRONIC 1/4 SY1

Max torque for screw, 0.3 lbf ft

Instructions:

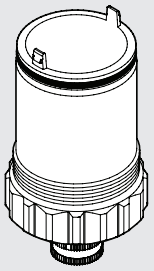
1) Screw the connecting bushing onto the REGTRONIC 1/4 as far as it will go. Use sealant on the G1/4 thread to provide a further seal.
2) Unscrew the bushing slightly until two surfaces of the hexagon are parallel to the body of REGTRONIC 1/4 (see diagram).
3) Insert the bushing into the Syntesi® unit.
4) Tighten the two self-tapping screws in the Syntesi® unit to a torque of 0.3 lbf ft max.

AUTOMATIC DRAIN (RA)



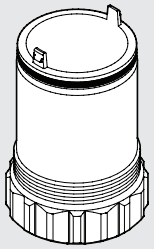
Code	Description
9000802	Spares RA automatic drain

BOWL RMSA/RA



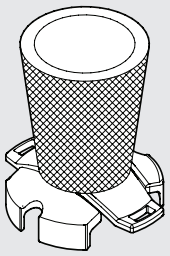
Code	Description
9210100	Bowl FIL FR DEP RMSA SY1
9210101	Bowl FIL FR RA SY1
9210105	Bowl FIL FR DEP RMSA SY2
9210106	Bowl FIL FR RA SY2

LUBRICATOR BOWL



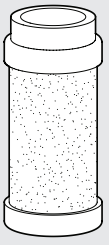
Code	Description
9210110	Bowl LUB SY1
9210115	Bowl LUB SY2

FILTERING ELEMENT



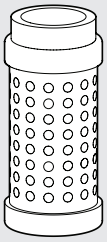
Code	Description
9210150	Filtering element 5 (yellow) µm SY1
9210151	Filtering element 20 (white) µm SY1
9210152	Filtering element 50 (blue) µm SY1
9210155	Filtering element 5 (yellow) µm SY2
9210156	Filtering element 20 (white) µm SY2
9210157	Filtering element 50 (blue) µm SY2

PURIFIER FILTERING ELEMENT



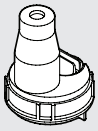
Code	Description
9210160	Cartridge DEP SY1
9210165	Cartridge DEP SY2

AC FILTERING ELEMENT



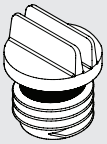
Code	Description
9210161	Cartridge AC SY1
9210166	Cartridge AC SY2

TRANSPARENT LUBRICATOR COVER



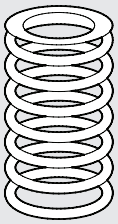
Code	Description
9210180	Transparent cover LUB SY1
9210185	Transparent cover LUB SY2

LUBRICATOR OIL-FILLING CAP



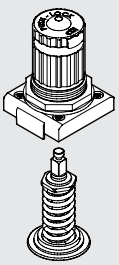
Code	Description
9210181	Oil-filling cap LUB SY1
9210186	Oil-filling cap LUB SY2

SPRINGS FOR REGULATORS AND FR



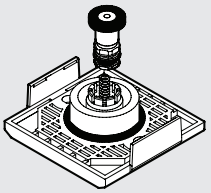
Code	Description
9210190	MO 02 (0-30 psi) SY1
9210191	MO 04 (0-60 psi) SY1
9210192	MO 08 (0-120 psi) SY1
9210193	MO 012 (0-180 psi) SY1
9210195	MO 02 (0-30 psi) SY2
9210196	MO 04 (0-60 psi) SY2
9210197	MO 08 (0-120 psi) SY2
9210198	MO 012 (0-180 psi) SY2

BELL FOR REG AND FR



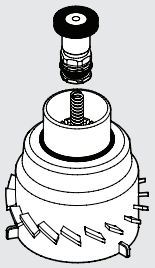
Code	Description
9210200	Bell 02 (0-30 psi) SY1
9210201	Bell 04 (0-60 psi) SY1
9210202	Bell 08 (0-120 psi) SY1
9210203	Bell 012 (0-180 psi) SY1
9210220	Bell 02 (0-30 psi) SY2
9210221	Bell 04 (0-60 psi) SY2
9210222	Bell 08 (0-120 psi) SY2
9210223	Bell 012 (0-180 psi) SY2

POPPET FOR REG



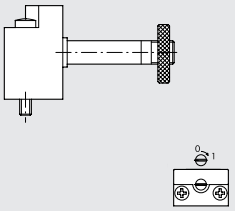
Code	Description
9210210	Poppet REG SY1
9210230	Poppet REG SY2

POPPET FOR FR



Code	Description
9210211	Poppet FR 5 µm SY1
9210212	Poppet FR 20 µm SY1
9210213	Poppet FR 50 µm SY1
9210231	Poppet FR 5 µm SY2
9210232	Poppet FR 20 µm SY2
9210233	Poppet FR 50 µm SY2

CNOMO CONTROL FOR V3V AND APR SY2



Code	Description
9453922	Elpn Cnomo control kit, manual bistable

NOTES