

SYNTESI® DEPURATOR

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" for size 1 and 1/4" 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.**

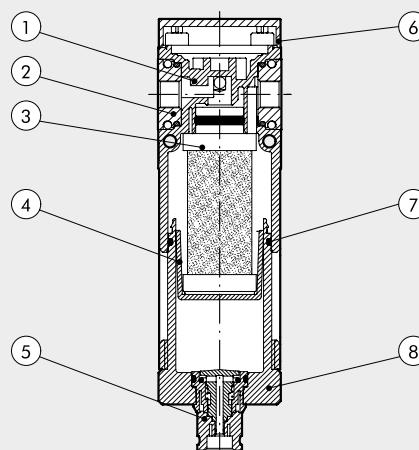


TECHNICAL DATA

TECHNICAL DATA		DEP SY1			DEP SY2			
Threaded port		1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
Degree of filtration	µm	0.01 - output air purity class ISO8573-1: 1.7.2 1 - output air purity class ISO8573-1: 3.7.3						
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	460			620			
	scfm	9			37			
Maximum suggested flow rate		See graph on the next page						
Min/max temperature at 10 bar; 1 MPa; 145 psi		N.B.: flow rates higher than the recommended value reduces purification efficiency						
Weight	g	From -10 to +50			From -10 to +50			
Condensate drain		194	189	180	483	456	452	440
		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure						
		SAC: automatic drain with condensate discharge. Operates by pressure drop – requires variable air take-offs.						
Fluid		Compressed air or other inert gases						
Bowl capacity	cm³	15			40			
Mounting position		Vertical			Vertical			
Port for additional air take-off (not purified air)		1/8", front and rear			1/4", front and rear			
Additional air take-off flow rate at 6.3 bar (0.63 MPa; 91 psi) ΔP 1 bar (0.1 MPa; 14 psi)	Nl/min	500			1500			
	scfm	18			53			
Wall fixing screws		No. 2 M4 screws			No. 2 M5 screws			
Notes on use		It is advisable to mount a 5 µm filter upstream of the purifier to retain solid particles						

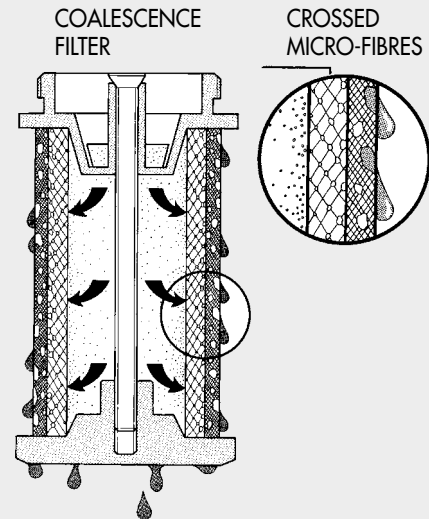
COMPONENTS

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



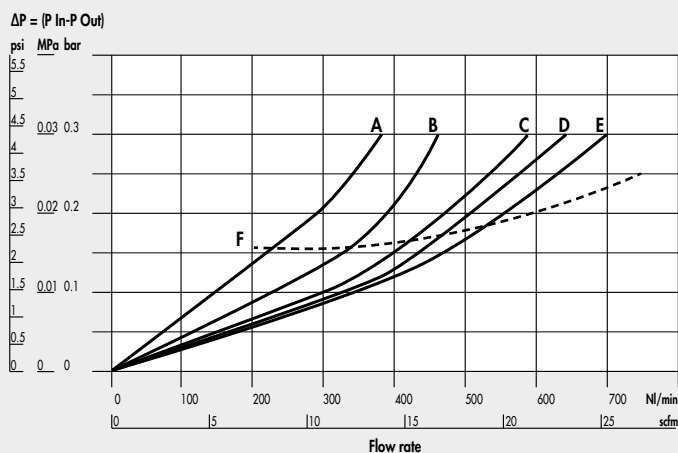
HOW THE COALESCENCE CARTRIDGE WORKS

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 prefilter before the fine oil filter to separate the solid particles first.

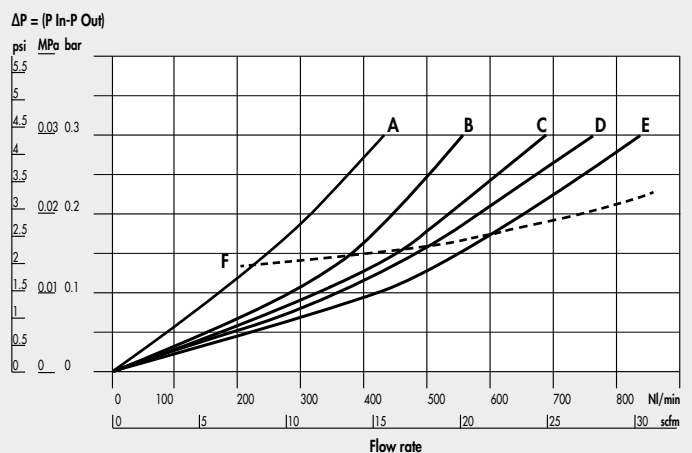


FLOW CHARTS

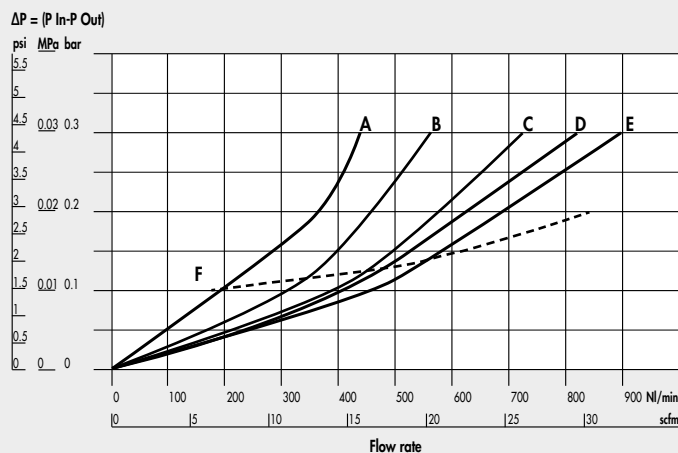
DEP Syntesi® SY1 1/8"



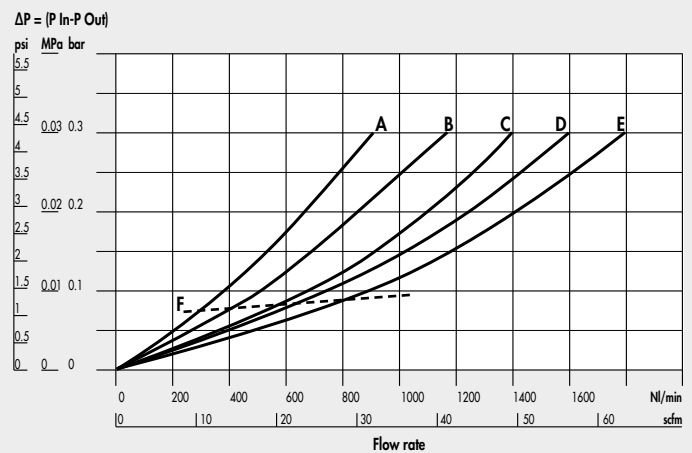
DEP Syntesi® SY1 1/4"



DEP Syntesi® SY1 3/8"



DEP Syntesi® SY2 3/8"

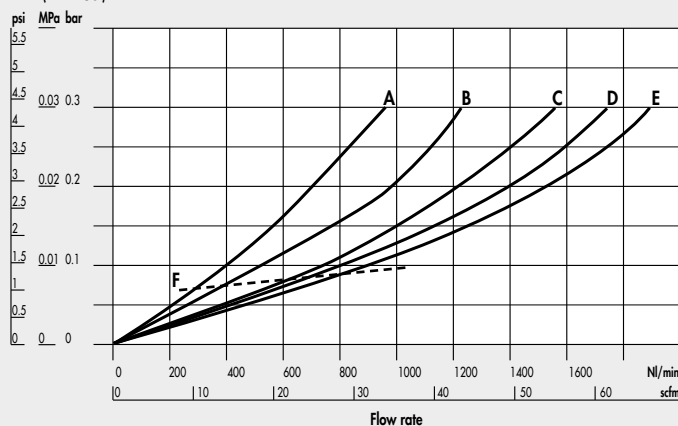


A = 2.5 bar - 0.25 MPa - 36 psi
B = 4 bar - 0.4 MPa - 58 psi

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

DEP Syntesi® SY2 1/2"

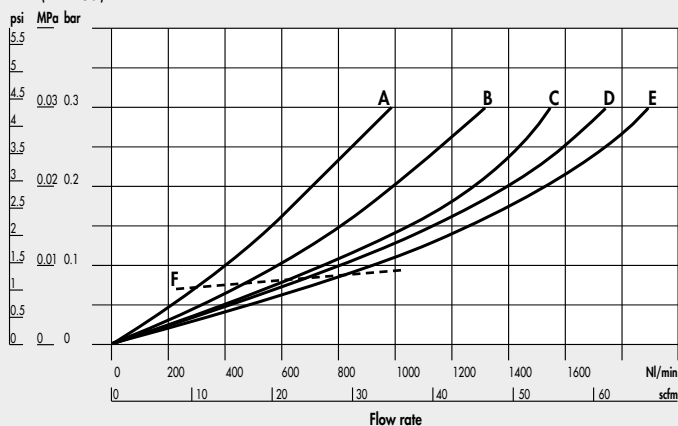
 $\Delta P = (P_{In} - P_{Out})$ 

A = 2.5 bar - 0.25 MPa - 36 psi
 B = 4 bar - 0.4 MPa - 58 psi

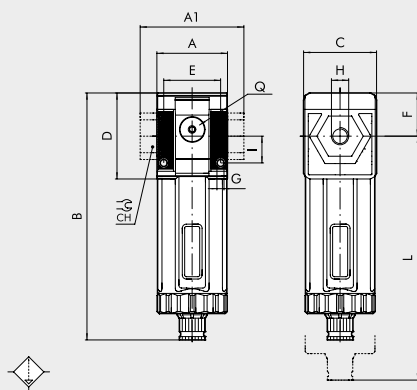
C = 6.3 bar - 0.63 MPa - 91 psi
 D = 8 bar - 0.8 MPa - 116 psi

E = 10 bar - 1 MPa - 145 psi
 F = max suggested flow

DEP Syntesi® SY2 3/4" - 1"

 $\Delta P = (P_{In} - P_{Out})$ 

DIMENSIONS



	SIZE 1			SIZE 2			
H (threaded port)	1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
A	42			60.5			
A1	-	-	44	-	-	95	95
B	RMSA 148			178			
	SAC 152			182			
C	44			61			
CH	-			-	-	32	36
D	51.5			70.5			
E	33.5			47.5			
F	25.8			38.2			
G	Hole for M4 screws			Hole for M5 screws			
I	16			22.5			
L	RMSA 202			245			
	SAC 206			249			
Q (no. 2 additional air takes-off)	1/8"			1/4"			

KEY TO CODES

56	1	1	D	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	TYPE	THREADED OUTPUT CONNECTION
56 Syntesi	1 Size 1	0 Without bushing	D Depurator	10 0.01 μm RMSA	0 Without bushing
5X Syntesi		1 1/8" port		11 0.01 μm SAC	1 1/8" port
anti-corrosion		2 1/4" port		30 1 μm RMSA	2 1/4" port
		3 3/8" port		31 1 μm SAC	3 3/8" port
	2 Size 2	0 Without bushing			0 Without bushing
		3 3/8" port			3 3/8" port
		4 1/2" port			4 1/2" port
		5 3/4" port			5 3/4" port
		6 1" port			6 1" port

RMSA: drain with manual condensate discharge and automatic discharge at zero pressure.
 SAC: automatic drain with condensate discharge.
Operates by pressure drop – requires variable air take-offs.

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	NOTE
Syntesi® SY1 DEPURATOR		Syntesi® SY2 DEPURATOR		Anti-corrosion version
5610D100	DEP SY1 RMSA without bushings	5620D100	DEP SY2 RMSA without bushings	5X
5611D101	DEP SY1 1/8 RMSA	5623D103	DEP SY2 3/8 RMSA	Example
5612D102	DEP SY1 1/4 RMSA	5624D104	DEP SY2 1/2 RMSA	5X11D101
5613D103	DEP SY1 3/8 RMSA	5625D105	DEP SY2 3/4 RMSA	DEP SY1 1/8 RMSA anti-corrosion
		5626D106	DEP SY2 1 RMSA	

NOTE

Anti-corrosion version

5X

Example

5X11D101 DEP SY1 1/8 RMSA anti-corrosion

SYNTESI® ACTIVE CARBON FILTER



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.

On the front and back there is a port (1/8" for size 1 and 1/4" 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 filtered by the activated-carbon cartridge.**

Cartridge life and efficiency can be increased by using pre-filtered (5µm) and purified (0.01µm) 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.

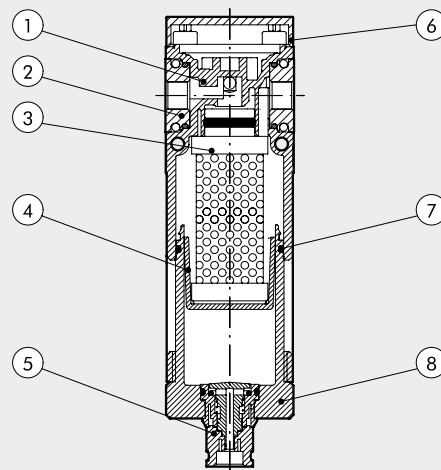
N.B.: to ensure the performance and duration stated on the data sheet, the load loss (ΔP) must not exceed 75 mbar.



TECHNICAL DATA		FIL CA SY1			FIL CA SY2			
Threaded port		1/8"	1/4"	3/8"	3/8"	1/2"	3/4"	1"
Residual oil at 20°C *	mg/m³	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			
Weight	g	195	190	181	483	456	452	440
Condensate drain		RMSA: drain with manual condensate discharge and automatic discharge at zero pressure						
Fluid		0.01 µm filtered and depurated air						
Mounting position		In any position			In any position			
Additional air take-off port (unfiltered air from cartridge CA)		1/8", front and rear			1/4", 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		No. 2 M4 screws			No. 2 M5 screws			
Notes on use		Upstream it's necessary to mount a coalescence filter depurator of 0.01µm.						
* if the load loss of 75 mbar is not exceeded								

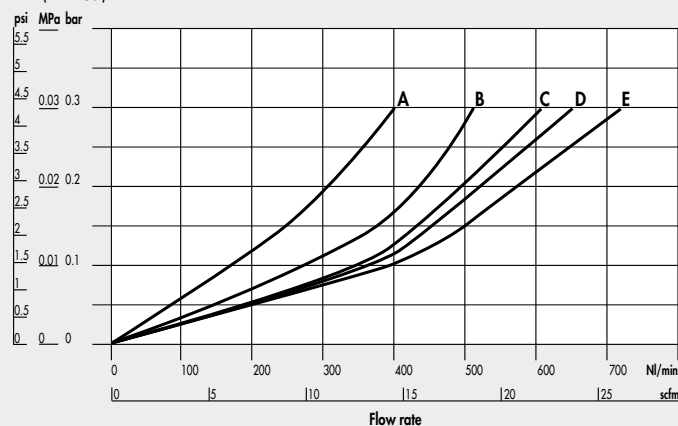
COMPONENTS

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

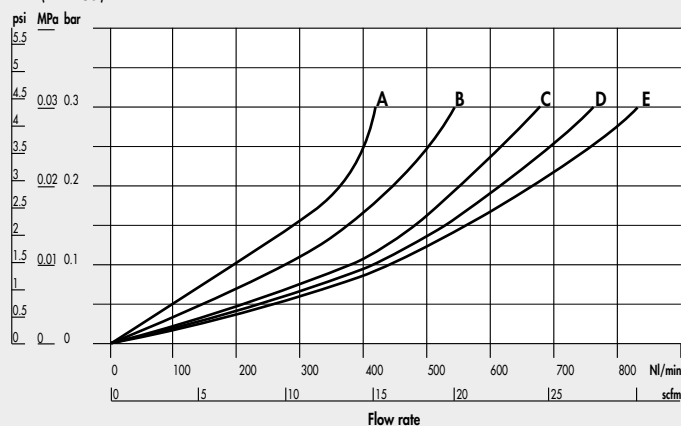


FLOW CHARTS

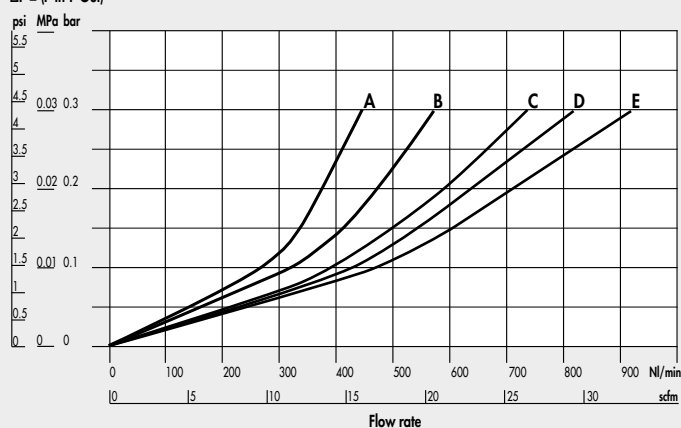
FIL CA Syntesi® SY1 1/8"

 $\Delta P = (P_{In} - P_{Out})$ 

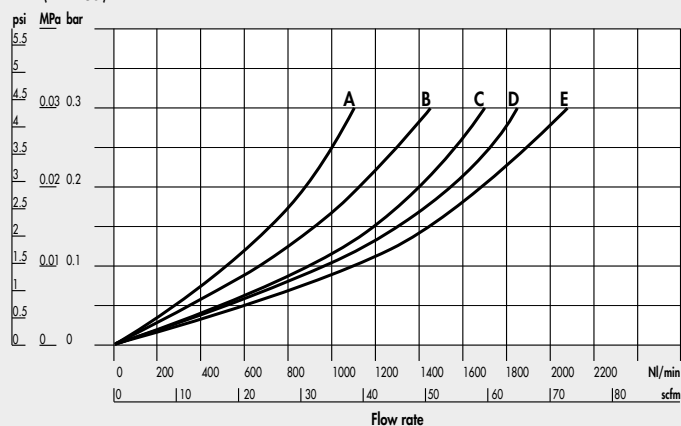
FIL CA Syntesi® SY1 1/4"

 $\Delta P = (P_{In} - P_{Out})$ 

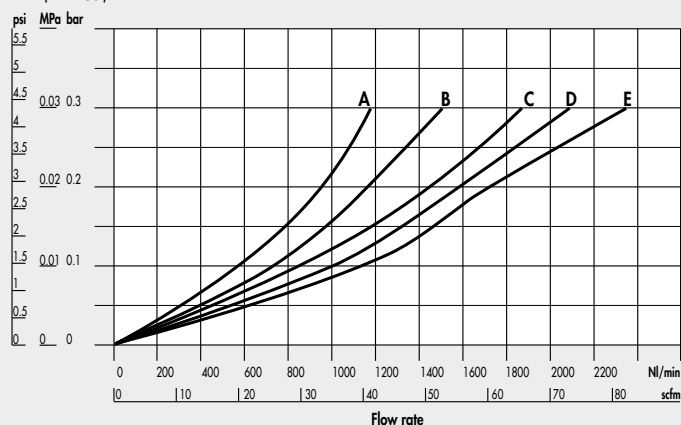
FIL CA Syntesi® SY1 3/8"

 $\Delta P = (P_{In} - P_{Out})$ 

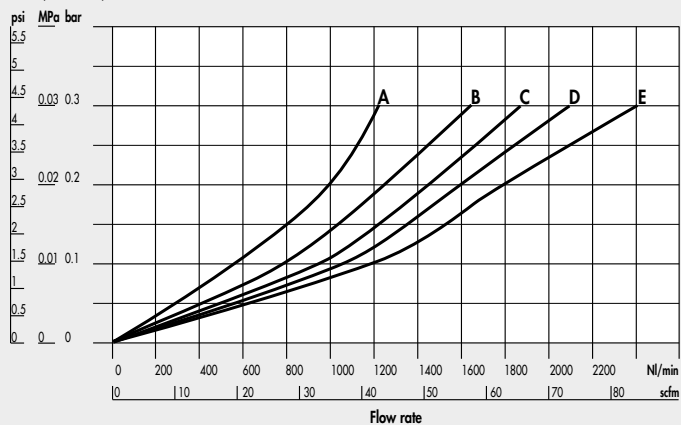
FIL CA Syntesi® SY2 3/8"

 $\Delta P = (P_{In} - P_{Out})$ 

FIL CA Syntesi® SY2 1/2"

 $\Delta P = (P_{In} - P_{Out})$ 

FIL CA Syntesi® SY2 3/4" - 1"

 $\Delta P = (P_{In} - P_{Out})$ 

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

Technical drawing of the 1000 Series 1/2" NPT Female Threaded Port Valve, showing front and side views with dimensions A through L.

[illegible]

56	1	1	C	10	1
SYNTESI	SIZE	THREADED INPUT CONNECTION	ELEMENT	TYPE	THREADED OUTPUT CONNECTION
56 Syntesi	1 Size 1	0 Without bushing	C Active carbon filter	10 RMSA	0 Without bushing
5X Syntesi		1 1/8" port			1 1/8" port
anti-corrosion		2 1/4" port			2 1/4" port
		3 3/8" port			3 3/8" port
	2 Size 2	0 Without bushing			0 Without bushing
		3 3/8" port			3 3/8" port
		4 1/2" port			4 1/2" port
		5 3/4" port			5 3/4" port
		6 1" port			6 1" port

UNITS

Syntesi® ACTIVE CARBON FILTER

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

[illegible]