



## FA1 SERIES

In line spin-on type filters

Inline filters with spin-on cartridge, suitable for use on suction, return or low pressure line.

Available with or without bypass, indicator port is a standard option to fit a visual or electrical indicator.



### HOUSING

tested according to NFPA T3.10.17, ISO12829, ISO3968

**PRESSURE:** Max operating: 12 bar  
Burst: 20 bar

**CONNECTIONS:** G 3/4" ÷ G 1 1/2"

**MATERIALS:** Head: aluminium alloy  
Bowl: painted steel  
Seal: NBR

**BYPASS VALVE:** No by-pass (max work pressure 5 bar)  
0,25 bar setting (SUCTION)  
1,7 bar setting (RETURN/IN LINE)

### ELEMENT

tested according to ISO 11170, 2941, 2942, 2943, 3724, 3968, 16889, 16908, 23181

**FILTER MEDIA:** Paper:  
C10 - C25 - CW25  
Inorganic microfiber:  
G10 - G25  
Wire mesh:  
T60 - T125

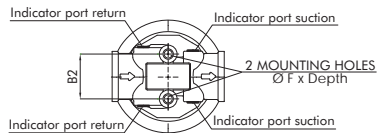
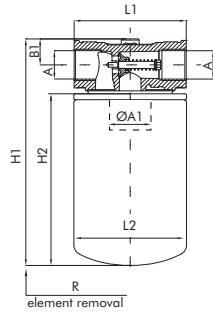
**COLLAPSE PRESSURE:** 5 bar

**TEMPERATURE RANGE:** from -30 °C to +100 °C

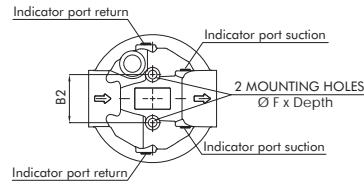
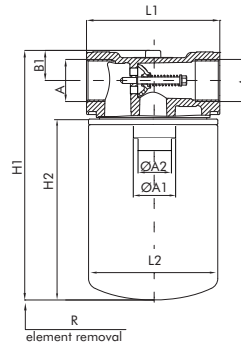
**FLUID COMPATIBILITY:** Full with HH-HL-HM-HV  
HETG-HEES (acc. to ISO 6743/4).  
For use with other fluid please contact Filtrec Customer Service (info@filtrec.it).

# OVERALL DIMENSIONS

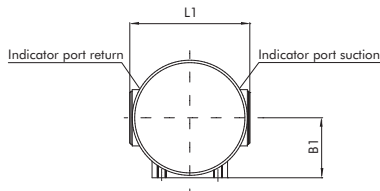
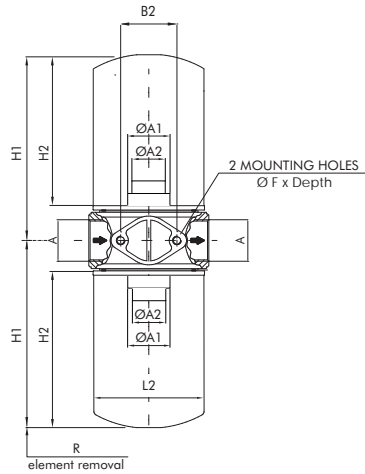
**FA1-10/11**



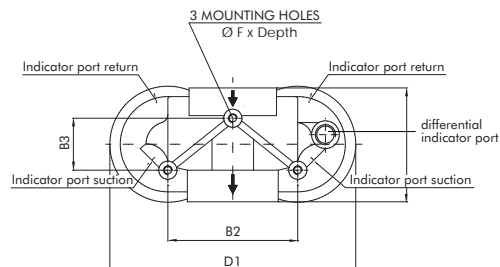
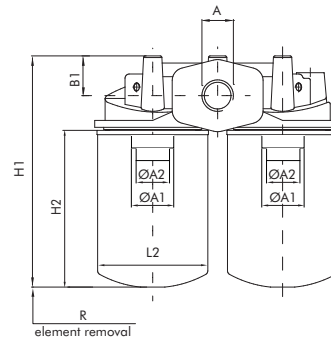
**FA1-20/21/22**



**FA1 30/31/32**



**FA1 40/41/42**



# NOMINAL SIZE

CODE	A	A1	A2	B1	B2	B3	D1	F	H1	L1	R	WEIGHT ELEMENT	H2	L2	
FA1-10	G 3/4"	G 3/4"	---	22	38	---	---	M8x15	192	95	20	1,3 Kg	A-1-10	148	
FA1-11									257			1,5 Kg	A-1-11	213	
FA1-20	G 1 1/4"	G 1 1/4"	1 1/2" 16-UN	30	50	---	---		249	133	---	1,9 Kg	A-1-20	182	
FA1-21									295			2,2 Kg	A-1-21	228	
FA1-22								380	2,6 Kg			A-1-22	313		
FA1-30	G 1 1/2"	G 1 1/4"	1 1/2" 16-UN	70	65	---	---	M10x15	218	140	40	3,5 Kg	2x A-1-20	182	
FA1-31									264			3,8 Kg	2x A-1-21	228	128
FA1-32									349			4,2 Kg	2x A-1-22	313	
FA1-40	G 1 1/2"	G 1 1/4"	1 1/2" 16-UN	46	150	60	284		267	132	---	5,0 Kg	2x A-1-20	182	
FA1-41	G 1 1/4" + 1 1/2" SAE J518-3000							313	5,2 Kg			2x A-1-21	228		
FA1-42	J518-3000							398	5,6 Kg			2x A-1-22	313		

## ORDERING INFORMATION

1.	2.	3.	4.	5.	6.	7.	8.
<b>F</b>	<b>A1</b>	<b>21</b>	<b>G10</b>	<b>B</b>	<b>B6</b>	<b>R</b>	<b>000</b>
SPARE ELEMENT	<b>A1</b>	<b>21</b>	<b>G10</b>				

1. FILTER SERIES	F		
2. FILTER ELEMENT SERIES	A1		
3. FILTER SIZE	10-11		
	20-21-22		
	30-31-32	fit 2 elements A120-A121-A122	
	40-41-42	fit 2 elements A120-A121-A122	
4. FILTER MEDIA	000	no element	
	C10	paper $\beta_{10\mu m(c)} > 2$	
	C25	paper $\beta_{25\mu m(c)} > 2$	
	CW25	paper $\beta_{25\mu m(c)} > 2$ + water absorbent	
	G10	glassfiber $\beta_{12\mu m(c)} > 1.000$	
	G25	glassfiber $\beta_{22\mu m(c)} > 1.000$	
	T60	wire mesh 60 $\mu m$	
	T125	wire mesh 125 $\mu m$	
5. SEALS	B	NBR	
6. CONNECTIONS	B4	G 3/4"	for sizes 10-11
	B6	G 1 1/4"	for sizes 20-21-22
	B7	G 1 1/2"	for sizes 30-31-32-40-41-42
	B6F7M	G 1 1/4" + 1 1/2" SAE J518-3000 psi - M12	for sizes 40-41-42
7. BYPASS VALVE	0	no by-pass	
	R	1,7 bar (return application)	
	S	0,25 bar (suction application)	
8. COMPULSORY FIELD	000	Filtrec standard	

## ACCESSORIES

The accessories must be ordered separately

### INDICATOR

\* Available also with LC24=Led connector (see clogging indicators catalogue)

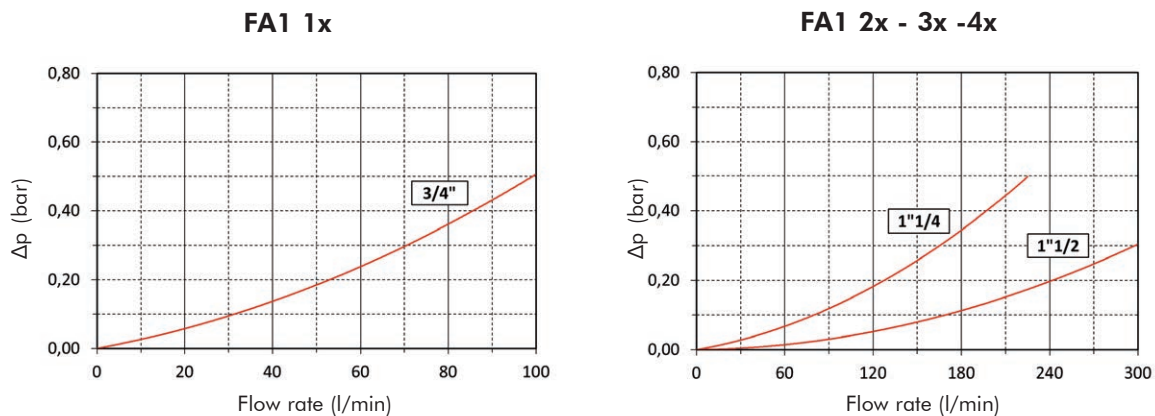
MPB	pressure gauge 0 ÷ 10 bar	for return application
* PDB	pressure switch 1,3 bar SPDT	
MPO	pressure gauge 0 ÷ 16 bar	for inline application
MPA	pressure/vacuum gauge -1 ÷ 5 bar	for return and suction application
MPS	vacuum gauge 0 ÷ -1 bar	for suction application
* PDS	vacuum switch -0,2 bar	
LC24	LED connector pressure/vacuum switch	

## PRESSURE DROP ( $\Delta p$ ) INFORMATION FOR FILTER SIZING

The total Delta P through a filter assembly is given from Housing  $\Delta p$  + Element  $\Delta p$ . This ideally should not exceed 0,2 bar for suction application and 0,5 bar for return (it should never exceed 1/3 of the set value of the by-pass valve). N.B. All the reported data have been obtained at our laboratory, according to specification ISO3968 with mineral oil having 32 cSt viscosity and density 0,875 Kg/dm<sup>3</sup>.

### HOUSING PRESSURE DROP

The housing  $\Delta p$  is given by the curve of the considered model and port, in correspondence of the flow rate value.



### ELEMENT PRESSURE DROP

The element  $\Delta p$  (bar) is given by the flow rate (l/min) multiplied by the factor in the table here below corresponding to the selected media and divided by 1000. If the oil has a viscosity  $V_x$  different than 32 cSt a corrective factor  $V_x/32$  must be applied.

Example: 80 l/min with A120G10 and oil viscosity 46 cSt:  $(80 \times 2,33)/1000 \times (46/32) = 0,27$  bar

Example: 80 l/min with (\*1) 2x A120G10 and oil viscosity 46 cSt:  $(80 \times 1,17)/1000 \times (46/32) = 0,13$  bar

	C10	C25	CW25	G10	G25	T60	T125
<b>A110</b>	1,90	1,70	6,17	3,60	2,80	0,90	0,60
<b>A111</b>	1,60	0,90	3,67	3,40	1,60	0,50	0,25
<b>A120</b>	0,67	0,57	2,27	2,33	1,23	0,27	0,23
<b>A121</b>	0,60	0,47	1,4	2,00	1,00	0,23	0,20
<b>A122</b>	0,33	0,26	0,94	1,13	0,57	0,13	0,11
<b>(*1) 2 x A120</b>	0,34	0,29	1,13	1,17	0,62	0,14	0,12
<b>(*2) 2 x A121</b>	0,30	0,24	0,70	1,00	0,50	0,12	0,10
<b>(*3) 2 x A122</b>	0,16	0,13	0,47	0,56	0,28	0,06	0,05

(\*1) values for FA130 & FA140 - (\*2) values for FA131 & FA141 - (\*3) values for FA132 & FA142  
These sizes are fitting 2 cartridges each

### EXAMPLE OF TOTAL $\Delta p$ CALCULATION

FA120G10BB6R000 with 80 l/min and oil 46 cSt:

Housing  $\Delta p$  0,1 bar + element  $\Delta p$  0,27 bar  $(80 \times 2,33)/1000 \times (46/32)$  = total assembly  $\Delta p$  0,37 bar.

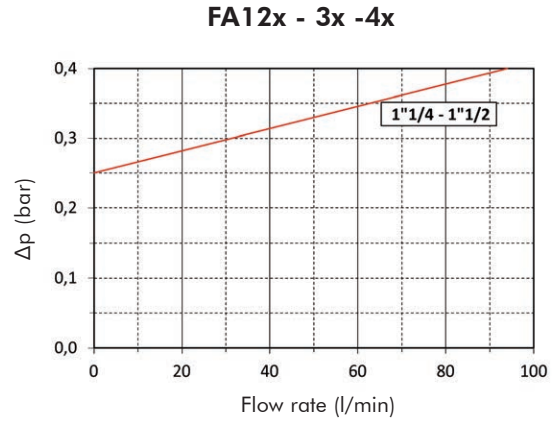
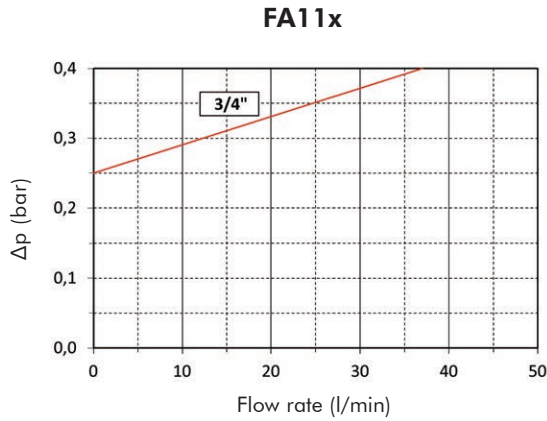
FA140G10BB6R000 with 80 l/min and oil 46 cSt:

Housing  $\Delta p$  0,03 bar + element  $\Delta p$  0,13 bar  $(80 \times 1,17)/1000 \times (46/32)$  = total assembly  $\Delta p$  0,16 bar.

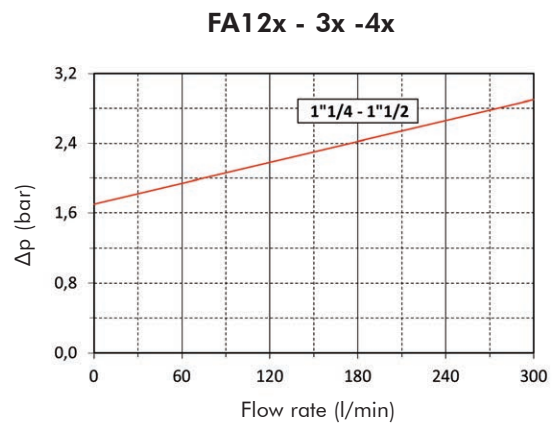
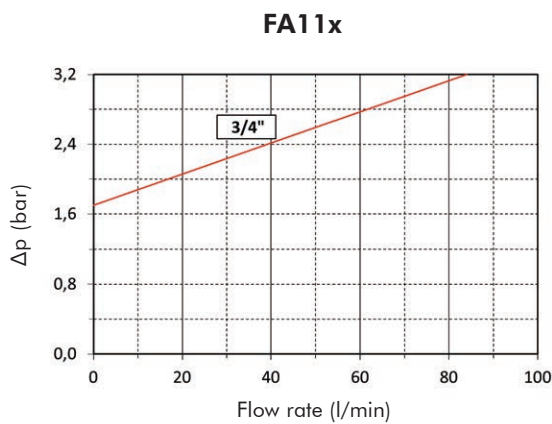
## BYPASS VALVE PRESSURE DROP

The bypass valve  $\Delta p$  is given by the curve of the considered model and setting, in correspondence of the flow rate value.

### SUCTION BYPASS

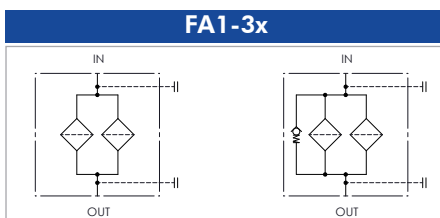
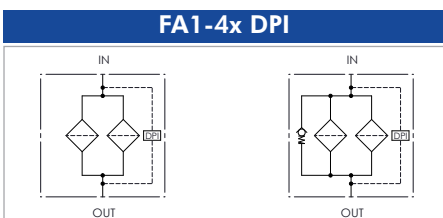
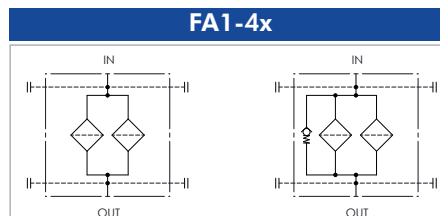
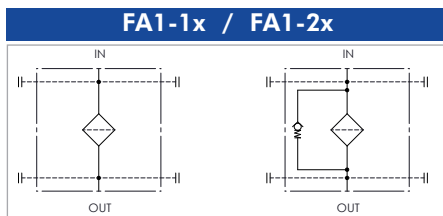


### RETURN/INLINE BYPASS



N.B. All the reported data have been obtained at our laboratory, according to specification ISO3968 with mineral oil having 32 cSt viscosity and density 0,875 Kg/dm<sup>3</sup>.

## HYDRAULIC SIMBOLS



## USER TIPS



- 1 FILTER HEAD
- 2 INDICATOR PORT
- 3 FIXING HOLES
- 4 FILTER CARTRIDGE
- 5 IDENTIFICATION LABEL


### CARTRIDGE TIGHTENING TORQUE

All models	3/4 turn
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### INDICATOR TIGHTENING TORQUE

Absolute	10 Nm
Differential	50 Nm



## WARNING

-  Make sure that Personal Protective Equipment (PPE) is worn during installation and maintenance operation.


## DISPOSAL OF FILTER ELEMENT

-  The used filter elements and the filter parts dirty of oil are classified as "Dangerous waste material": they must be disposed according to the local laws by authorized Companies.



## INSTALLATION

-  1. The IN and OUT ports must be connected to the hoses in the correct flow direction (an arrow shows on the filter head (1)).
- 2. The filter housing should be preferably mounted with the cartridge (5) downward.
- 3. Secure to the frame the filter head (1) using the threaded fixing holes (3).
- 4. Verify that no tension is present on the filter after mounting.
- 5. Enough space must be available for filter element cartridge replacement.
- 6. The visual clogging indicator must be in a easily viewable position.
- 7. When a electrical indicator is used, make sure that it is properly wired.
-  8. Never run the system with no filter element fitted.
- 9. Keep in stock a spare FILTREC filter element for timely replacement when required.

## OPERATION

-  1. The filter must work within the operating conditions of pressure, temperature and compatibility given in the first page of this data sheet.
- 2. The filter element must be replaced as soon as the clogging indicator signals at working temperature (in cold start conditions, oil temperature lower than 30°C, a false alarm can be given due to oil viscosity).
- 3. If no clogging indicator is mounted, replace the element according to the system manufacturer's recommendations.

## MAINTENANCE

-  1. Make sure that the system is switched off and there is no residual pressure in the filter.
- 2. Unscrew the filter cartridge (5) by turning it anti-clockwise and remove it.
- 3. Fit a new FILTREC cartridge element (5), verifying the part number, particularly concerning the micron rating.
- 4. Ensure that the head mounting face is clean.
-  5. Lubricate the gasket of the replacement cartridge and the thread prior to assembly.
- 7. Spin on the new cartridge until it reaches the mounting face and tighten for 3/4 turn.

