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.

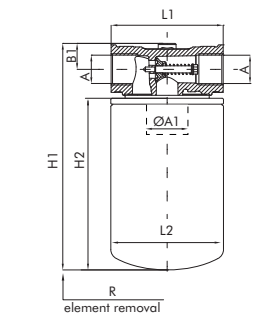
TECHNICAL INFORMATION

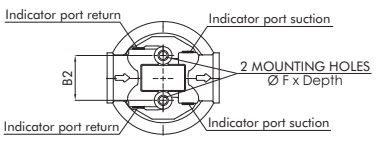
HOUSING	tested according to NFPA T3.10.17 , ISO3968
HYDRAULIC SYMBOL:	
PRESSURE:	Max operating: 12 bar Burst: 20 bar
CONNECTION PORTS:	G 3/4"÷1 1/2"
MATERIALS:	Head: aluminium alloy Bowl: painted steel Seal: NBR
BYPASS:	No by-pass or: 0,25 bar setting (SUCTION) 1,7 bar setting (RETURN)

ELEMENT	tested according to ISO 2941, 2942, 2943, 3968, 16889, 23181
FILTER MEDIA:	Inorganic microfiber: G03 - G06 - G10 - G25 Paper: C10 - C25 Wire mesh: T60 - T125
DIFFERENTIAL COLLAPSE PRESSURE:	5 bar
OPERATING TEMPERATURE RANGE:	-25°C +100°C
FLUID COMPATIBILITY:	Full with HH-HL-HM-HV (acc. To ISO 2943). For use with other fluid please contact Filtrec Customer Service (info@filtrec.it).

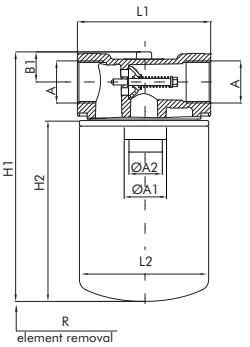
OVERALL DIMENSIONS

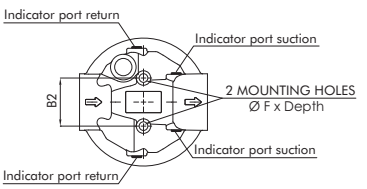
FA1-10/11



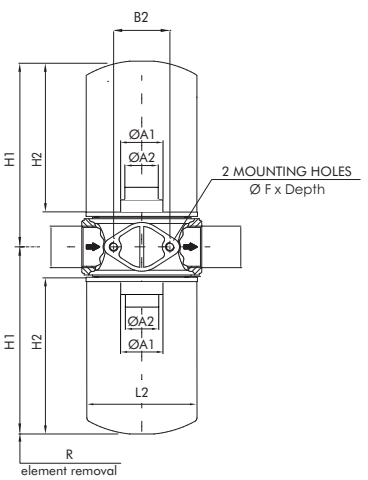


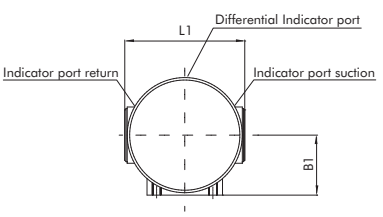
FA1-20/21



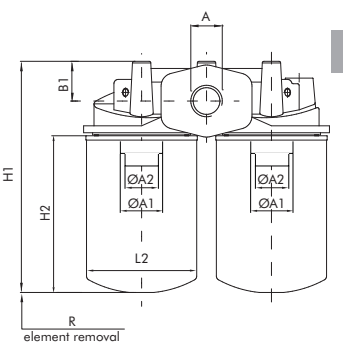


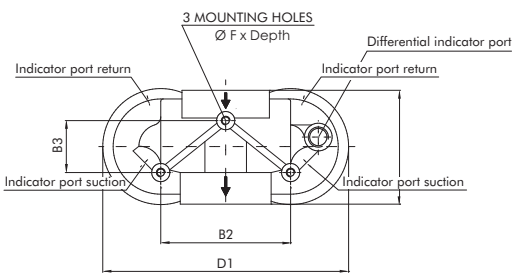
FA1 30/31





FA1 40/41





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	96
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	40	1,9 Kg	A-1-20	182	128
FA1-21									295			2,2 Kg	A-1-21	228	
FA1-30	G 1 1/2"	G 1 1/4"	1 1/2" 16-UN	70	65			M10x15	218	140		3,6 Kg	2x A-1-20	182	
FA1-31									262			3,8 Kg	2x A-1-21	228	
FA1-40	G 1 1/2"			46	150	60	284		267	132		5,0 Kg	2x A-1-20	182	
FA1-41									313			5,2 Kg	2x A-1-21	228	

ORDERING INFORMATION

1.	2.	3.	4.	5.	6.	7.	8.
F	**A1**	**21**	**G10**	**B**	**B6**	**R**	**MPB**
SPARE ELEMENT	**A1**	**21**	**G10**				

1. FILTER SERIES	F		
2. FILTER ELEMENT SERIES	A1		
3. FILTER SIZE	10-11		
	20-21		
	30-31	fit 2 elements A120-A121	
	40-41	fit 2 elements A120-A121	
4. FILTER MEDIA	000	no element	
	C10	paper $ß_{10\mu m(c)} > 2$	
	C25	paper $ß_{25\mu m(c)} > 2$	
	G03	glassfiber $ß_{4,5\mu m(c)} > 1.000$	
	G06	glassfiber $ß_{7\mu m(c)} > 1.000$	
	G10	glassfiber $ß_{12\mu m(c)} > 1.000$	
	G25	glassfiber $ß_{22\mu m(c)} > 1.000$	
	T60	wire mesh 60 mm	
	T125	wire mesh 125 mm	
5. SEALS	B	NBR	
6. CONNECTIONS	B4	G 3/4"	for sizes 10-11
	B6	G 1 1/4"	for sizes 20-21
	B7	G 1 1/2"	for sizes 30-31-40-41
7. BYPASS VALVE	0	no by-pass	
	R	1,7 bar (return application)	
	S	0,25 bar (suction application)	
8. INDICATOR	000	no indicator	
	MPB (ex R9)	pressure gauge 0÷10 bar	for return application
	PDB (ex R13)	pressure switch 1,3 bar SPDT	
	MP0 (ex R12)	pressure gauge 0÷16 bar	for inline application
	Z1	differential visual 1,3 bar	for size 30-31 inline application
	Z2	differential electric visual 1,3 bar	
	Z20	differential visual 1,3 bar	for size 40-41 inline application
	MPA (ex R7)	pressure/vacuum gauge -1÷5 bar	for return and suction application
	MPS (ex S1)	vacuum gauge 0÷-1 bar	for suction application
	PDS (ex S13)	vacuum switch -0,2 bar	

ACCESSORIES	LC24	LED connector

The accessories must be ordered separately

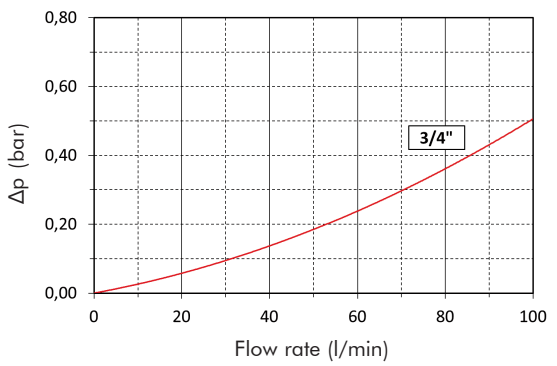
PRESSURE DROP (Δp) INFORMATION FOR FILTER SIZING

The total Delta P through a filter assembly is given from Housing Δp + Element Δp.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^3.

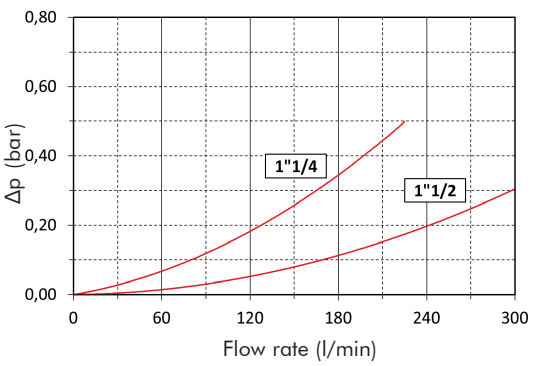
HOUSING PRESSURE DROP

The housing Δp is given by the curve of the considered model and port, in correspondence of the flow rate value.

FA1 1x



FA1 2x - 3x -4x



ELEMENT PRESSURE DROP

The element Δp (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 Vx different than 32 cSt a corrective factor Vx/32 must be applied.
Example: 40 l/min with A120C10 and oil viscosity 46 cSt > 40 x 0,67/1000 x 46/32 = 0,04 bar
Example: 80 l/min with A120G10 and oil viscosity 46 cSt > 80 x 2,33/1000 x 46/32 = 0,27 bar

	C10	C25	G03	G06	G10A	G25A	T60	T125
A110	1,90	1,70	6,50	6,00	3,60	2,80	0,90	0,60
A111	1,60	0,90	4,30	4,00	3,40	1,60	0,50	0,25
A120	0,67	0,57	4,33	3,67	2,33	1,23	0,27	0,23
A121	0,60	0,47	3,67	2,67	2,00	1,00	0,23	0,20
(*1) 2 x A120	0,34	0,29	2,17	1,84	1,17	0,62	0,14	0,12
(*2) 2 x A121	0,30	0,24	1,84	1,34	1,00	0,50	0,12	0,10

(*1) values for FA130 & FA140 - (*2) values for FA131 & FA141. These sizes are fitting 2 cartridges each

EXAMPLE OF TOTAL Δp CALCULATION (SUCTION)

FA120C10BB6SMPS with 40 l/min and oil 46 cSt:
Housing Δp 0,03 bar + element Dp 0,04 bar (40 x 0,67/1000 x 46/32) = total assembly Δp 0,07 bar.

EXAMPLE OF TOTAL Δp CALCULATION (RETURN/INLINE)

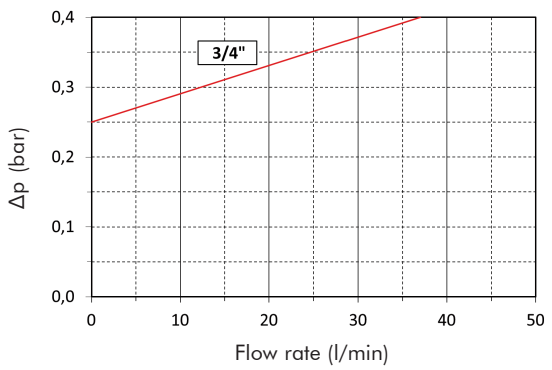
FA120G10BB6RMPB with 80 l/min and oil 46 cSt:
Housing Δp 0,1 bar + element Dp 0,27 bar (80 x 2,33/1000 x 46/32) = total assembly Δp 0,37 bar.

BYPASS VALVE PRESSURE DROP

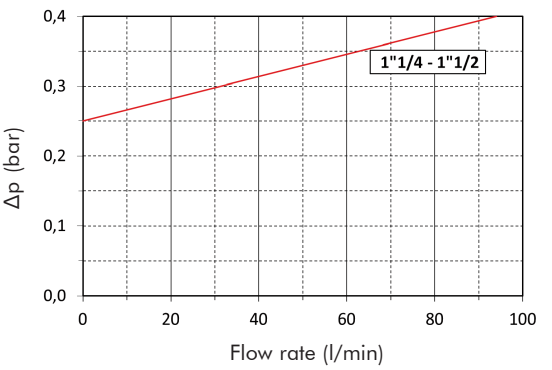
The bypass valve Δp is given by the curve of the considered model and setting, in correspondence of the flow rate value.

SUCTION BYPASS

FA11x

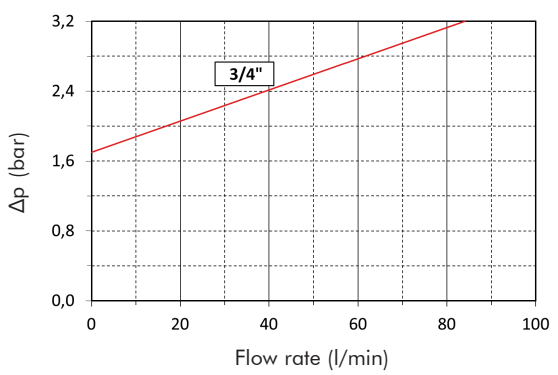


FA12x - 3x -4x

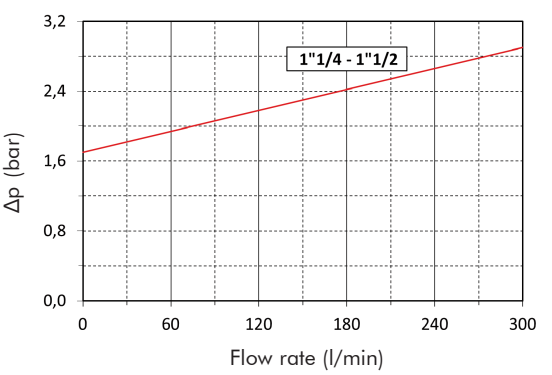


RETURN/INLINE BYPASS

FA11x



FA12x - 3x -4x



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^3.

USER TIPS

1. FILTER HEAD
2. INDICATOR PORT
3. FIXING HOLES
4. BY- PASS VALVE
5. FILTER ELEMENT
6. IDENTIFICATION LABEL

CARTRIDGE TIGHTENING TORQUE	
All models	3/4 turn

INDICATOR TIGHTENING TORQUE	
MP0-MPS-MPB-MPA-PDB PDS	10 Nm
Z1-Z2-Z20	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.

CT05-rev.00-07/20