



EFRB Series

EVOTEK Return Filters

Product Description

- Operating pressure up to 10 bar
- 500 l/min max. flow rate
- installation in Tank-top
- application in Cooling Circuits, Fluid Conditioning Systems, Lube Oil Systems, Process Systems, Return Lines
- compliant with industry relevant ISO standards(see ISO test below)

Technical Specifications

Application

Port Sizes:

Flow Rate:

Operating Pressure:

Burst Pressure:

Element Collapse Pressure:

By-pass Opening Pressure:

Material

Seals:

Filter Head:

Filter Bowl:

Compatibility:

Tested according to ISO standards:

Tank-top return filter

Threaded Connections according to BSP and NPT standard in ½ " to 1-½" and SAE08/SAE12/SAE16/SAE20/SAE24 threads

Flange Connections in SAE DN40/ SAE DN50 / SAE DN80 for 3000psi

max. 500 l/min

max. 10 bar

min. 21 bar

10 bar

$\Delta p = 1.7 \text{ bar} + 0.3 \text{ bar}$ (EFRB1 to 5.1 & EFRB10)

$\Delta p = 3.0 \text{ bar} + 0.3 \text{ bar}$ (EFRB7 , 9 & 11)

NBR or FPM (-25°C to 100°C)

Aluminum

Polyamide

Suitable for mineral oils, lubrication oils, non-flam fluids, synthetic and rapidly biodegradable oils (for use with water or other fields please contact our technical department)

ISO2941 Collapse/burst resistance

ISO2942 Fabrication integrity

ISO2943 Material compatibility integrity

ISO3723 Method for end load test

ISO3724 Flow fatigue characteristics

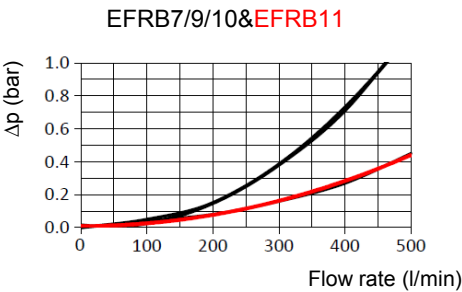
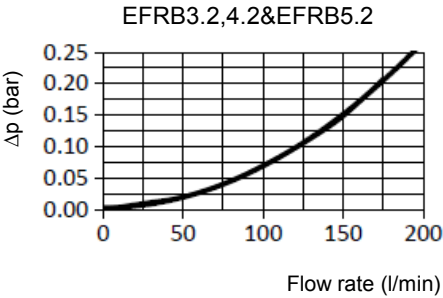
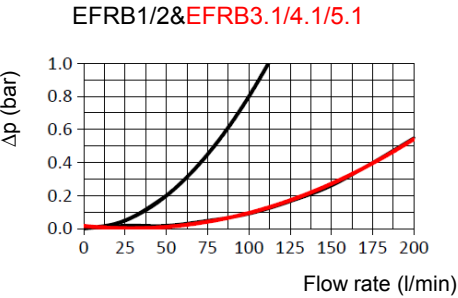
ISO3968 Pressure Drop vs. Flow Rate

ISO16889 Multi-Pass Test

EFRB Return Filter Series

Pressure Drop Graphs (Δp)

Pressure Drop of Filter Housing only



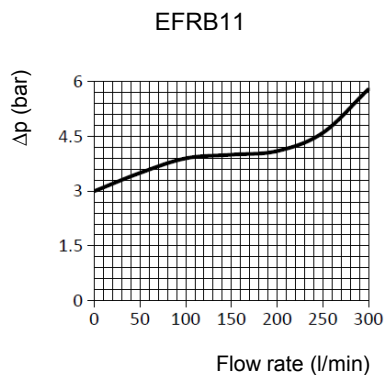
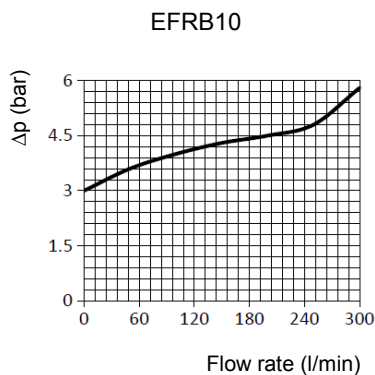
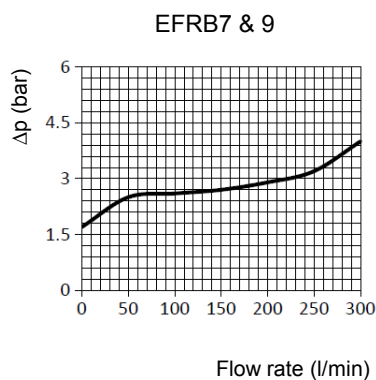
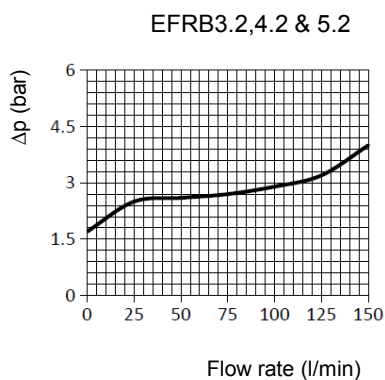
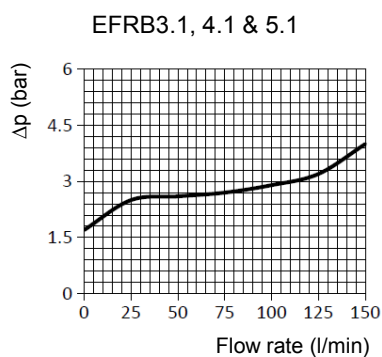
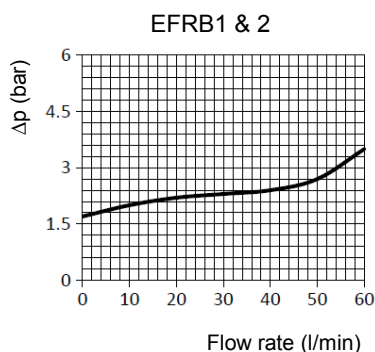
Graph of oil flow velocity
(we recommend to select size of the filter considering range of oil velocity between 1.5 to 3 m/s for return series)



EFRB Return Filter Series

Pressure Drop Graphs (Δp)

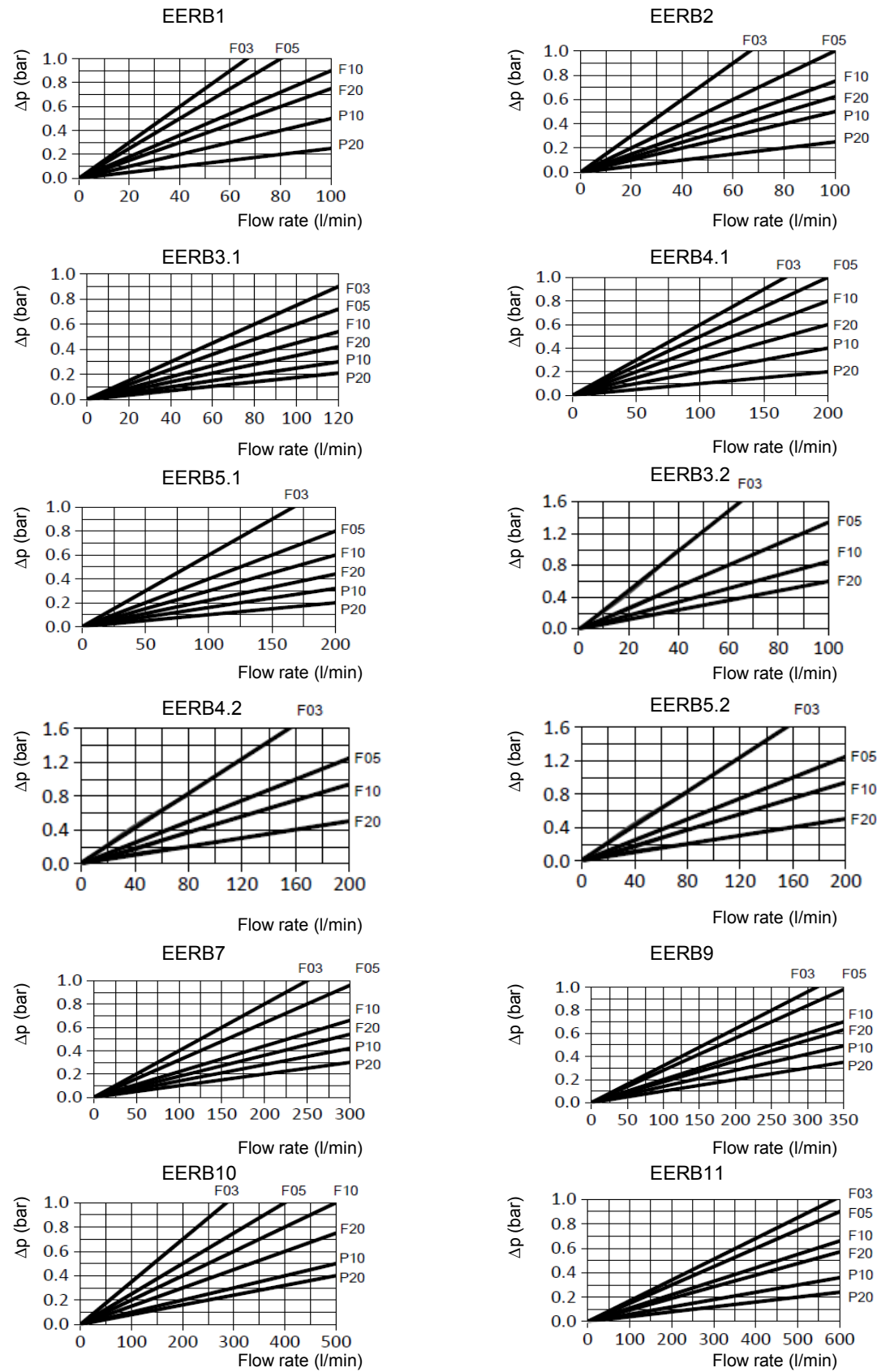
Pressure drop graph on by-pass valve



EFRB Return Filter Series

Pressure Drop Graphs (Δp)

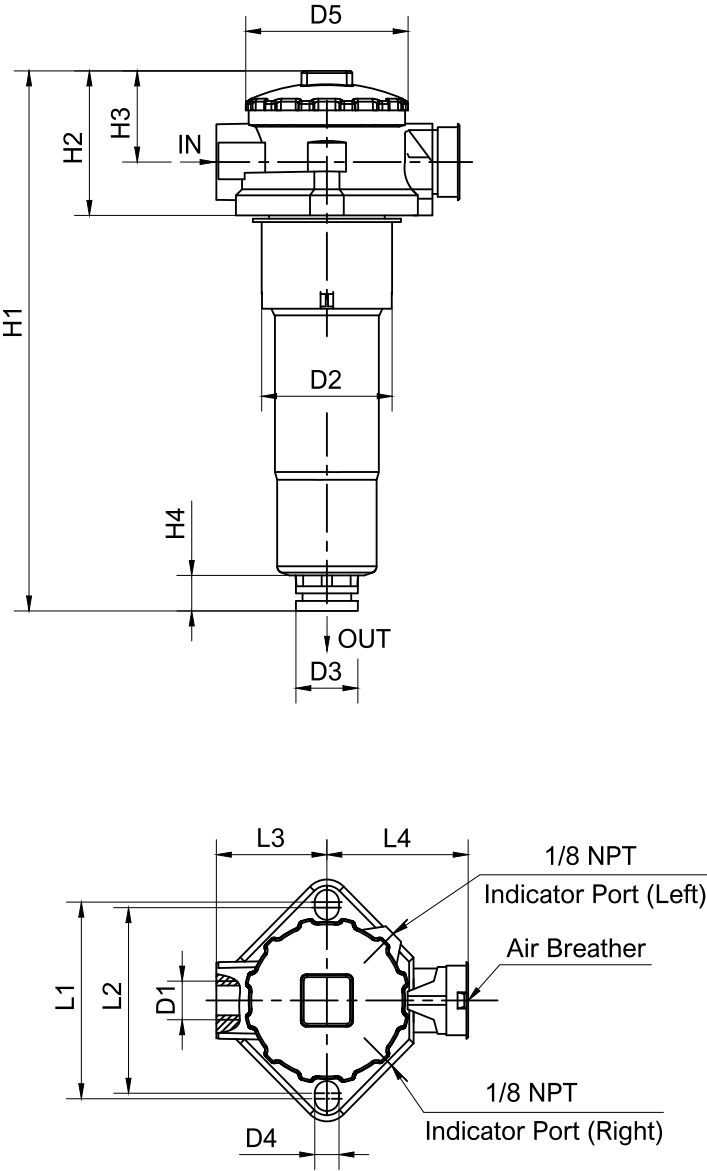
Pressure Drop with Clean Filter Elements (F and P filter media)



EFRB Return Filter Series

Technical Drawings and Dimension

EFRB1&2



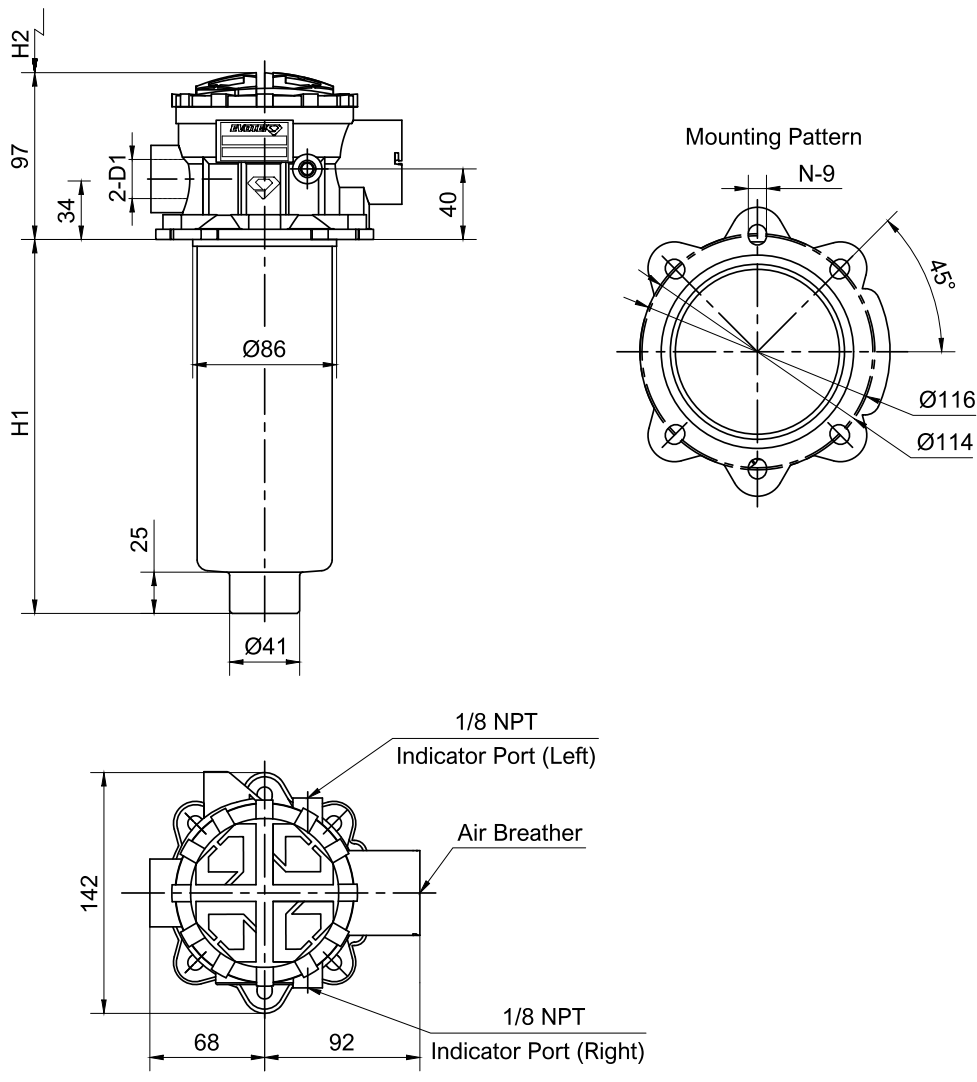
Threaded Connection Ports

Type	Connection Port (BSP/NPT/SAE)		Dia				Height							
	inch	mm	D2	D3	D4	D5	H1	H2	H3	H4	L1	L2	L3	L4
EFRB1	1/2" - 3/4"	63	28	11	75	150	67	41	21	88	86	54	70	
EFRB2	SAE08	63	28	11	75	247	67	41	21	88	86	54	70	

EFRB Return Filter Series

Technical Drawings and Dimension

EFRB3.1,4.1&5.1



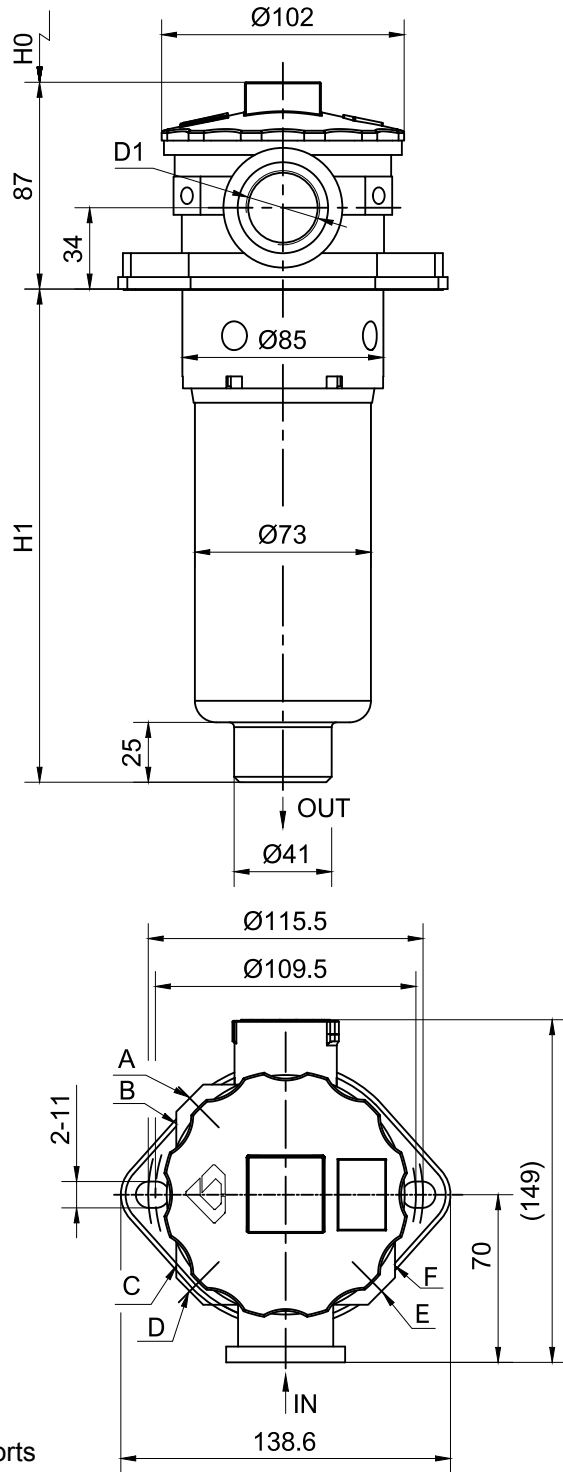
Threaded Connection Ports

Type	Connection Port (BSP/NPT/SAE)	Height	
	E)	inch	mm
Type	D1	H1	N
	3/4" - 1"	150	2
EFRB3.1	SAE12	225	4
EFRB4.1	SAE16	325	6
EFRB5.1			

EFRB Return Filter Series

Technical Drawings and Dimension

EFRB3.2,4.2&EFRB5.2



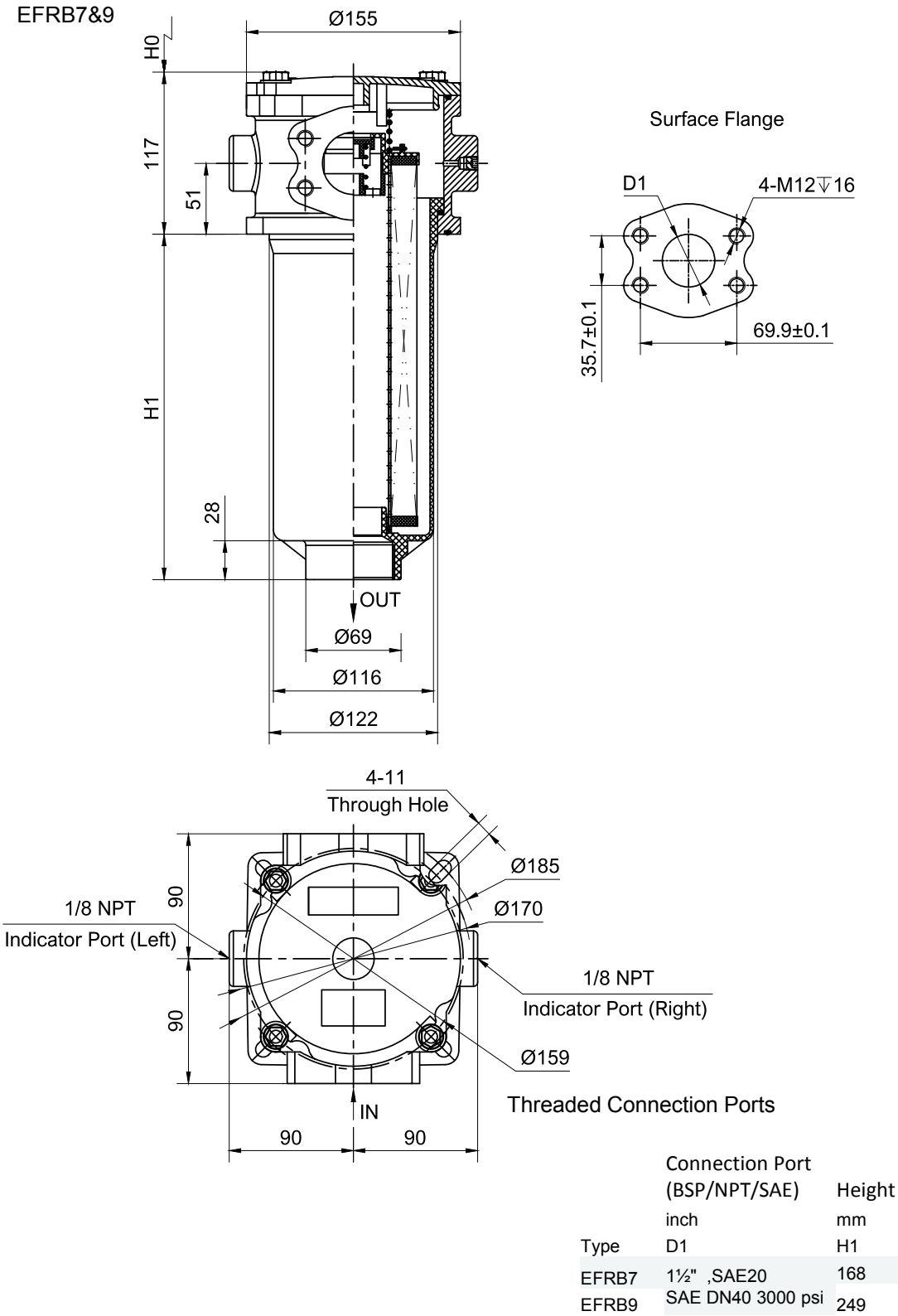
Threaded Connection Ports

Type	Connection Port (BSP/NPT/SAE)	Height		location
	inch	mm		
EFRB3.2	D1 3/4"	122	135	A,B,C,D,E,F
EFRB4.2	1/2", 3/4", 1 5/16-12UN-2B	210	223	
EFRB5.2	1"	272	285	

EFRB Return Filter Series

Technical Drawings and Dimension

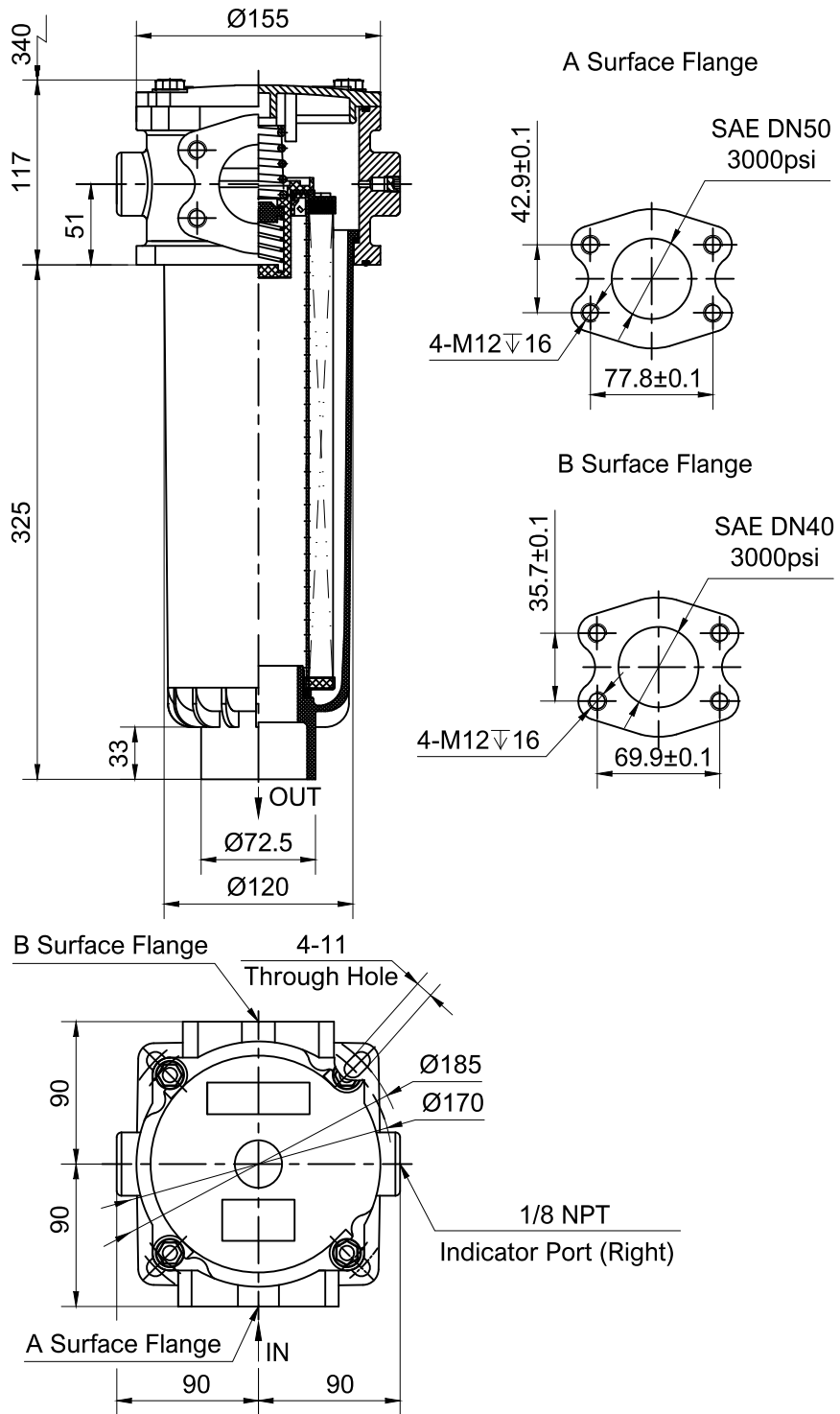
EFRB7&9



EFRB Return Filter Series

Technical Drawings and Dimension

EFRB10





EFRB Return Filter Series

Order Codes

Filter Assembly Series	A	B	C	-	D	E	-	F	G	Element Series	A	C	D	E
EFRB	3	BC	B	-	06	F20	-	R15	Y	EERB	3	B	06	F20

Select the code for each filter (or element) feature according to your requirements and place it in the sequence (see example above) to create the corresponding product order code.

A Size		Flow Rate		D By-pass Valve			
1		30 l/min		00		No	
2		60 l/min		06		1.7 bar	
3.1		110 l/min					
4.1		140 l/min					
5.1		160 l/min					
B Connection Ports				E Media Material		Filtration Collapse Pressure	
A08		SAE08		P10	Cellulose	10µm	10 bar
A12		SAE12		P20	Cellulose	20µm	10 bar
A16		SAE16		F03	Fiberglass	5µm	10 bar
BB		BSP ½"		F05	Fiberglass	7µm	10 bar
BC		BSP ¾"		F10	Fiberglass	12µm	10 bar
BD		BSP 1"		F20	Fiberglass	21µm	10 bar
NB		NPT ½"		W25	Wire Mesh	25µm	10 bar
NC		NPT ¾"		W60	Wire Mesh	60µm	10 bar
ND		NPT 1"		W90	Wire Mesh	90µm	10 bar
				F Indicator		Connection	
				0	No		
				PZ	0~4bar Axial pressure gauge		1/8NPT Thread EFRB1~5.1&10
				R15	1.5 bar Pressure Switch		1/8NPT Thread EFRB1~5.1&10
C Seal				G Breather			
B		NBR		N	None		
V		FPM		Y	With air breather EFRB1~5.1		

EFRB Return Filter Series

Order Codes

Filter Assembly Series	A	B	C	-	D	E	-	F	Element Series	A	C	D	E
EFRB	3	BC	B	-	06	F20	-	R15	EERB	3	B	06	F20

Select the code for each filter (or element) feature according to your requirements and place it in the sequence (see example above) to create the corresponding product order code.

A Size		Flow Rate	D By-pass Valve			
7		250 l/min	00	No		
9		330 l/min	06	1.7 bar	(EFRB10)	
10		400 l/min	08	3 bar	(EFRB7, 9, 11)	
11		500 l/min				
B Connection Ports			E Media	Material	Filtration	Collapse Pressure
A24	SAE24		P10	Cellulose	10µm	10 bar
BF	BSP 1-½"		P20	Cellulose	20µm	10 bar
NF	NPT 1-½"		F03	Fiberglass	5µm	10 bar
FE	(3000psi)	SAE DN40	F05	Fiberglass	7µm	10 bar
FF	(3000psi)	SAE DN50	F10	Fiberglass	12µm	10 bar
FH	(3000psi)	SAE DN80	F20	Fiberglass	21µm	10 bar
			W25	Wire Mesh	25µm	10 bar
			W60	Wire Mesh	60µm	10 bar
			W90	Wire Mesh	90µm	10 bar
C Seal						
B	NBR		F Indicator			Connection
V	FPM		0	No		
			PZ	0~4bar Axial pressure gauge		1/8NPT Thread EFRB10
			PA	0~10bar Axial pressure gauge		1/8NPT Thread EFRB7, 9, 11
			R15	1.5 bar Pressure Switch		1/8NPT Thread EFRB10
			R20	2 bar Pressure Switch		1/8NPT Thread EFRB7, 9, 11

EFRB Return Filter Series

Order Codes

Filter Assembly Series	A	B	C	-	D	E	-	F	G	Element Series	A	C	D	E
EFRB	3.2	BC	B	-	08	F10	-	00	N	EERB	3.2	B	08	F10

Select the code for each filter (or element) feature according to your requirements and place it in the sequence (see example above) to create the corresponding product order code.

A Size	Flow Rate
3.2	75 l/min
4.2	165 l/min
5.2	185 l/min

B Connection Ports

A08	SAE08
A12	SAE12
A16	SAE16
BB	BSP ½"
BC	BSP ¾"
BD	BSP 1"
NB	NPT ½"
NC	NPT ¾"
ND	NPT 1"

D By-pass Valve

00	No
08	3 bar

E Media	Material	Filtration	Collapse Pressure
P10	Cellulose	10µm	10 bar
P20	Cellulose	20µm	10 bar
F03	Fiberglass	5µm	10 bar
F05	Fiberglass	7µm	10 bar
F10	Fiberglass	12µm	10 bar
F20	Fiberglass	25µm	10 bar
W25	Wire Mesh	25µm	10 bar

F Indicator

		Connection
00	NO	
PC	0~6bar Axial pressure gauge	1/8NPT Thread
R20	2 bar Pressure Switch	1/8NPT Thread

G Breather

N	None
Y	With air breather