



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

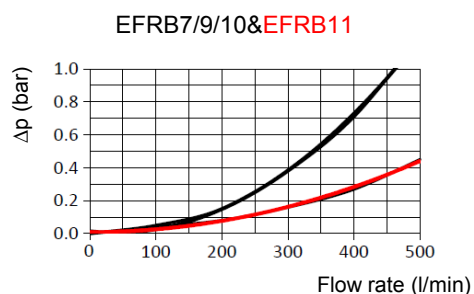
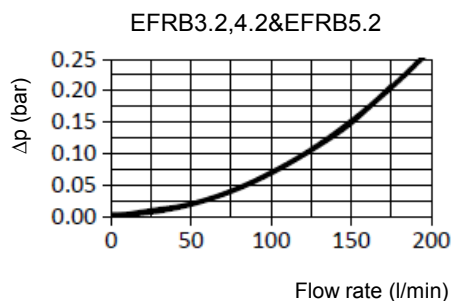
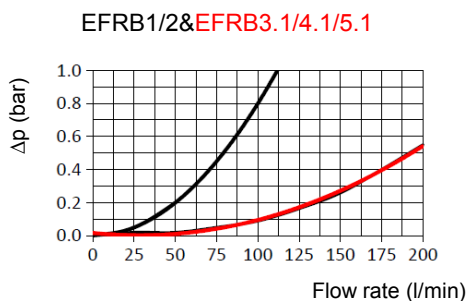
ISO3968 Pressure Drop vs. Flow Rate

ISO16889 Multi-Pass Test

EFRB Return Filter Series

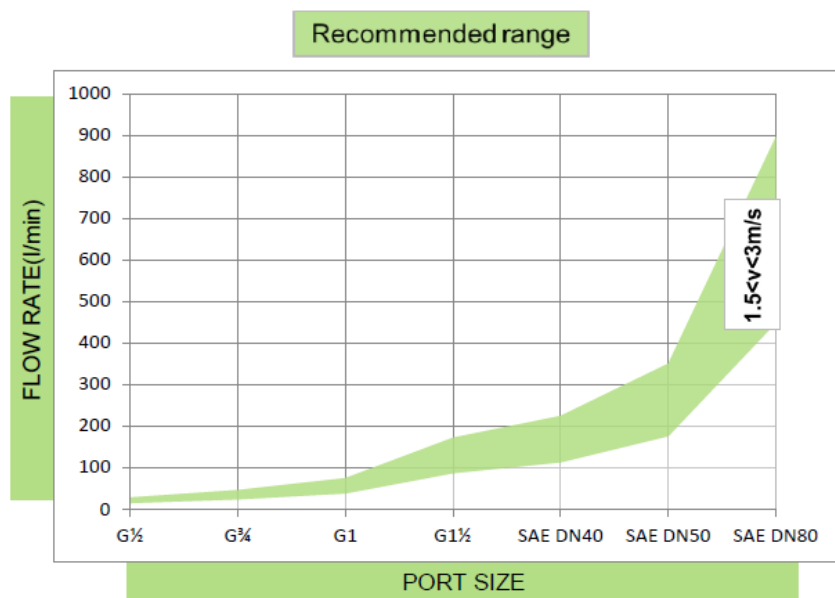
Pressure Drop Graphs (Δp)

Pressure Drop of Filter Housing only



Graph of oil flow velocity

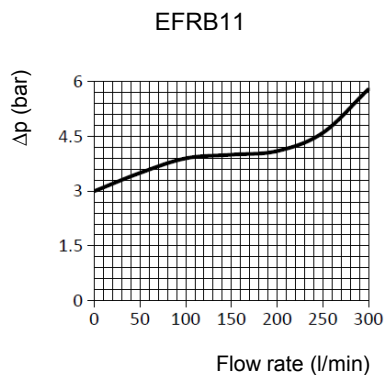
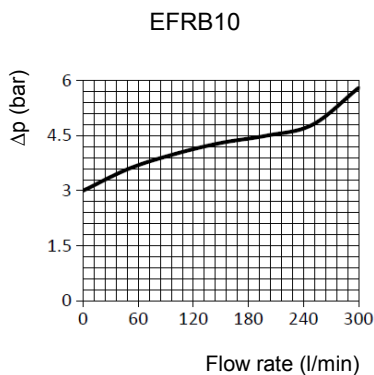
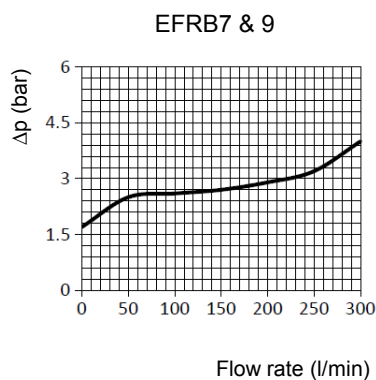
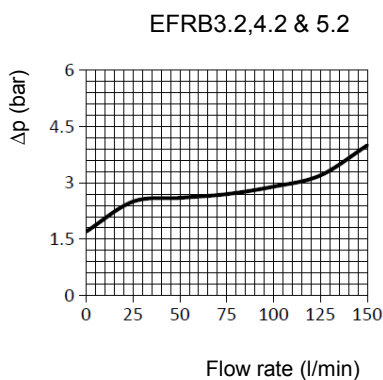
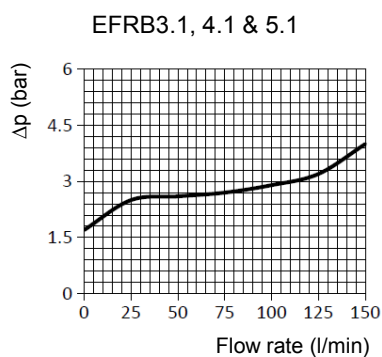
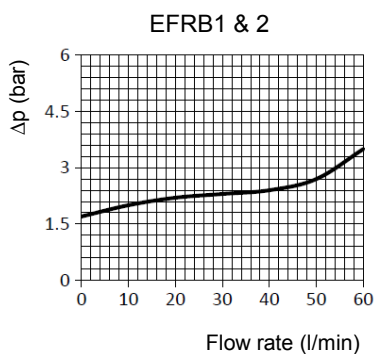
(we recommend to select size of the filter considering range of oil velocity between 1.5 to 3 m/s for return series)



EFRB Return Filter Series

Pressure Drop Graphs (Δp)

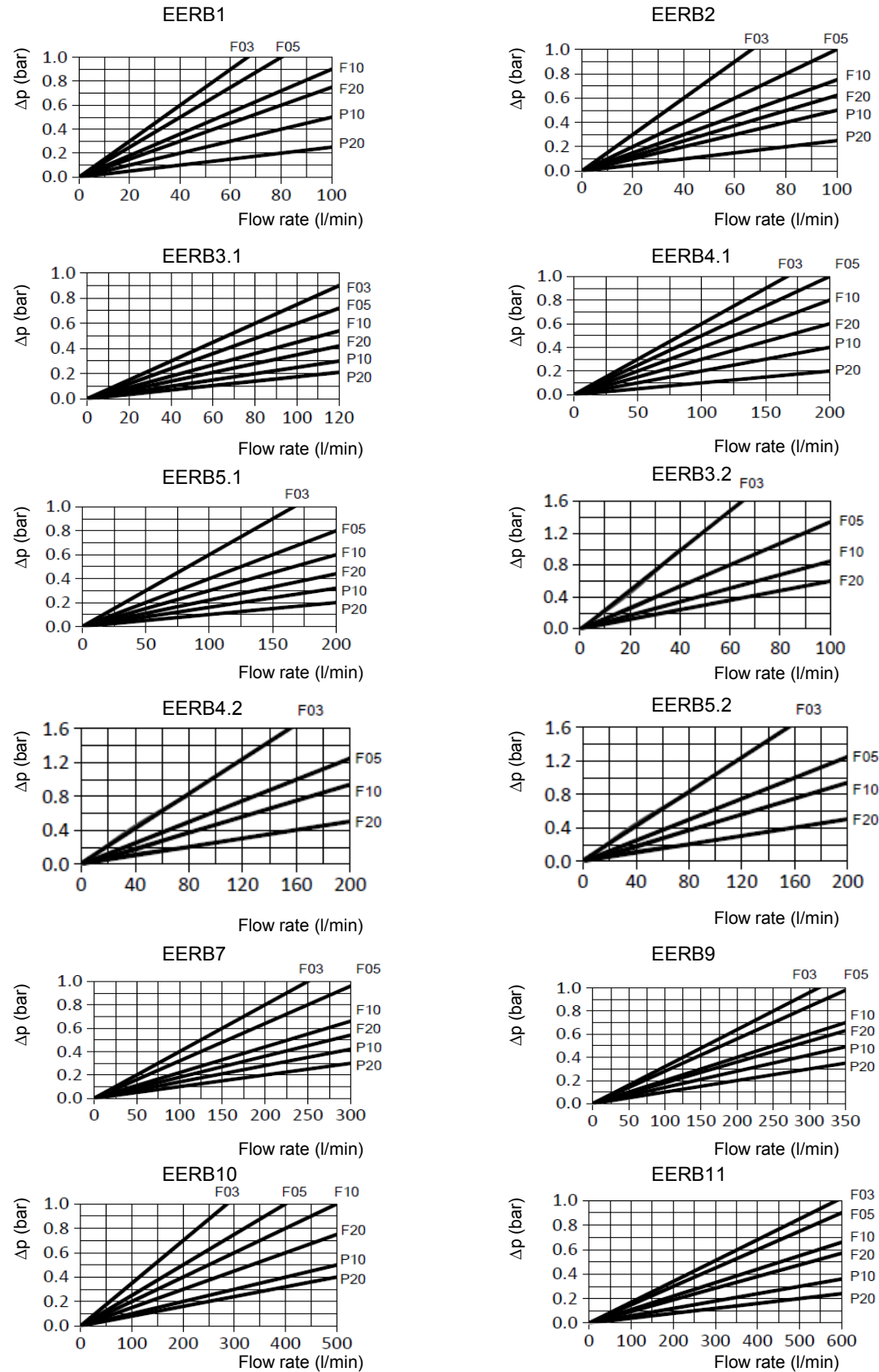
Pressure drop graph on by-pass valve



EFRB Return Filter Series

Pressure Drop Graphs (Δp)

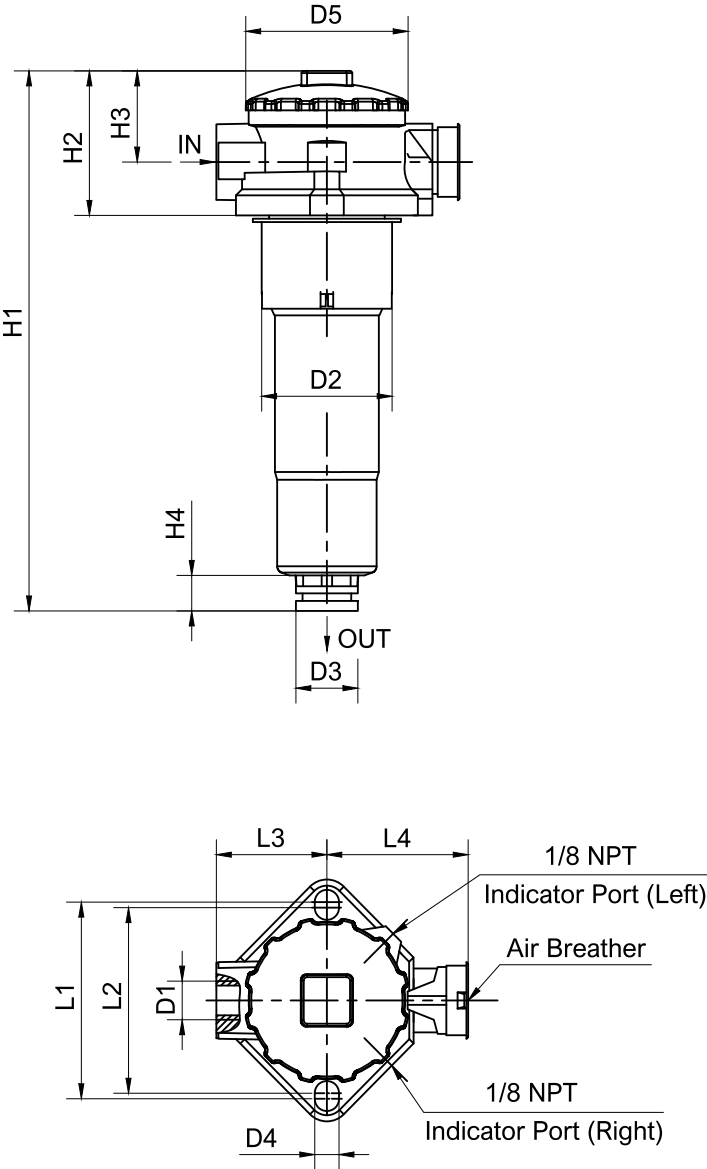
Pressure Drop with Clean Filter Elements (F and P filter media)



EFRB Return Filter Series

Technical Drawings and Dimension

EFRB1&2



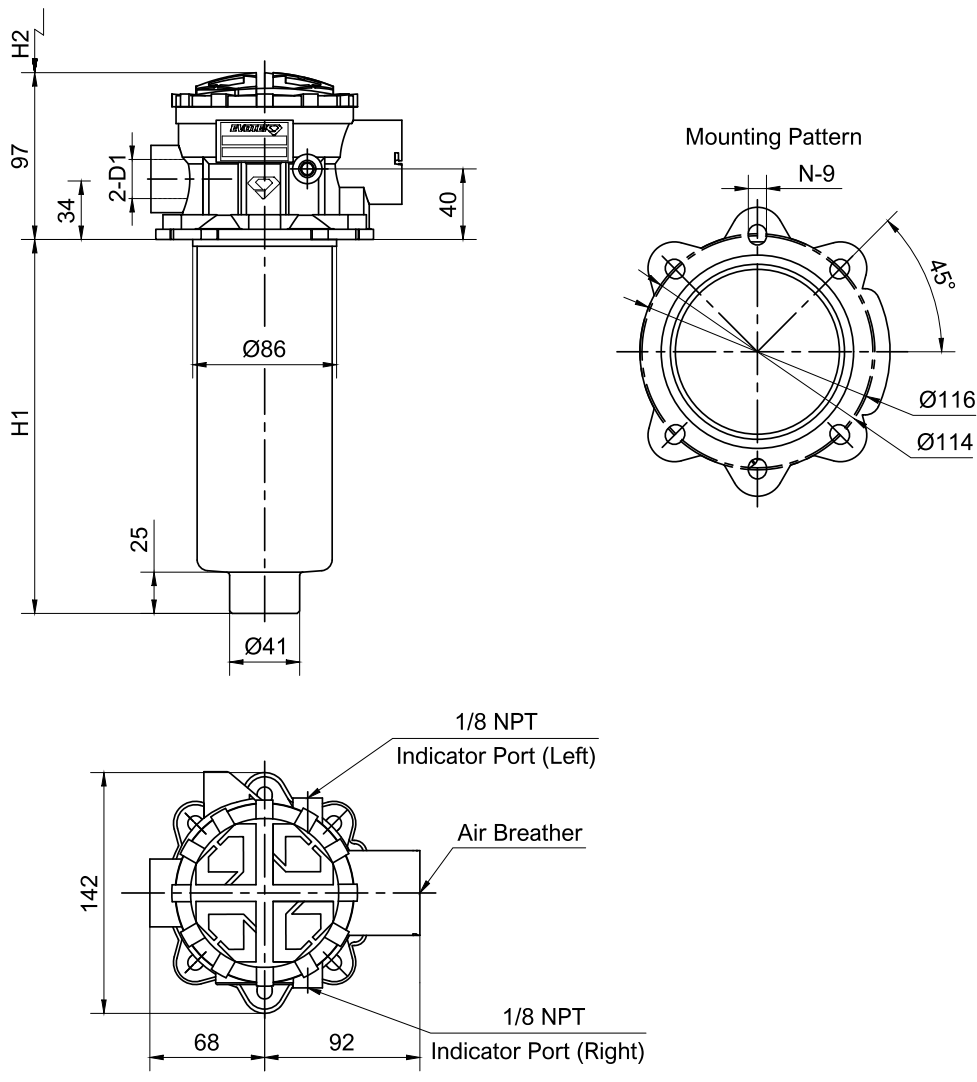
Threaded Connection Ports

Type	Connection Port (BSP/NPT/SAE)	Dia				Height							
	inch	D2 mm	D3 mm	D4 mm	D5 mm	H1 mm	H2 mm	H3 mm	H4 mm	L1 mm	L2 mm	L3 mm	L4 mm
EFRB1	1/2" - 3/4" SAE08	63	28	11	75	150	67	41	21	88	86	51	70
EFRB2	SAE12	63	28	11	75	247	67	41	21	88	86	51	70

EFRB Return Filter Series

Technical Drawings and Dimension

EFRB3.1,4.1&5.1



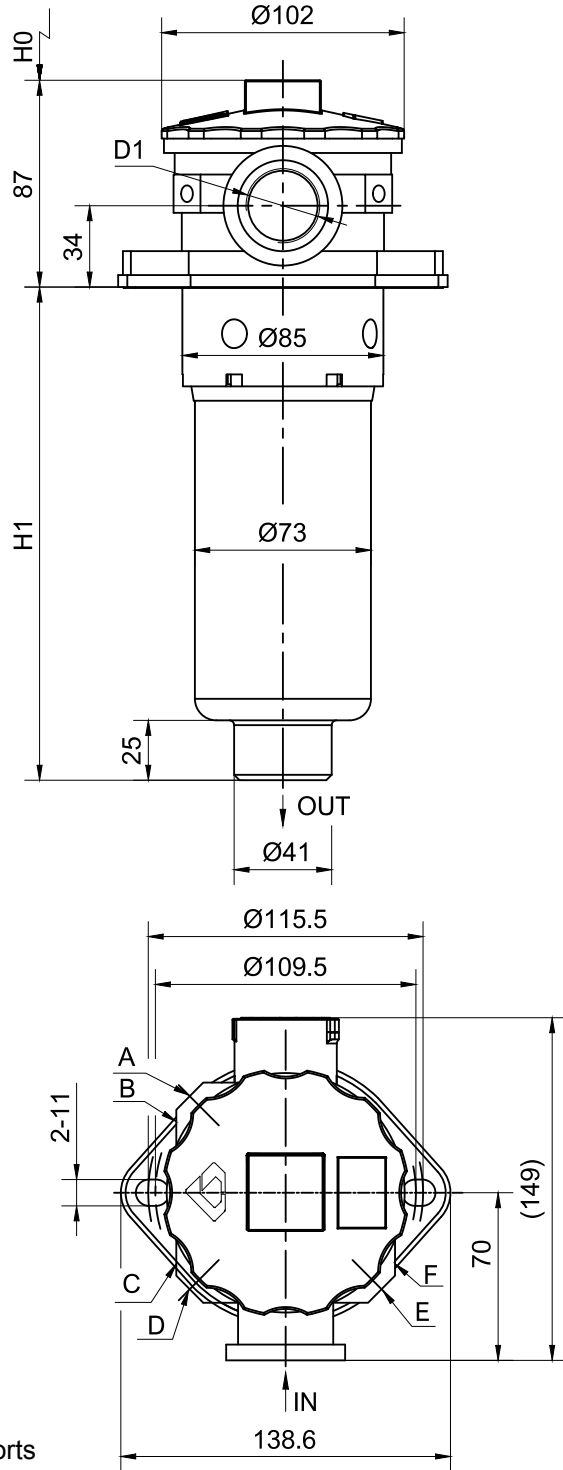
Threaded Connection Ports

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

EFRB Return Filter Series

Technical Drawings and Dimension

EFRB3.2,4.2&EFRB5.2

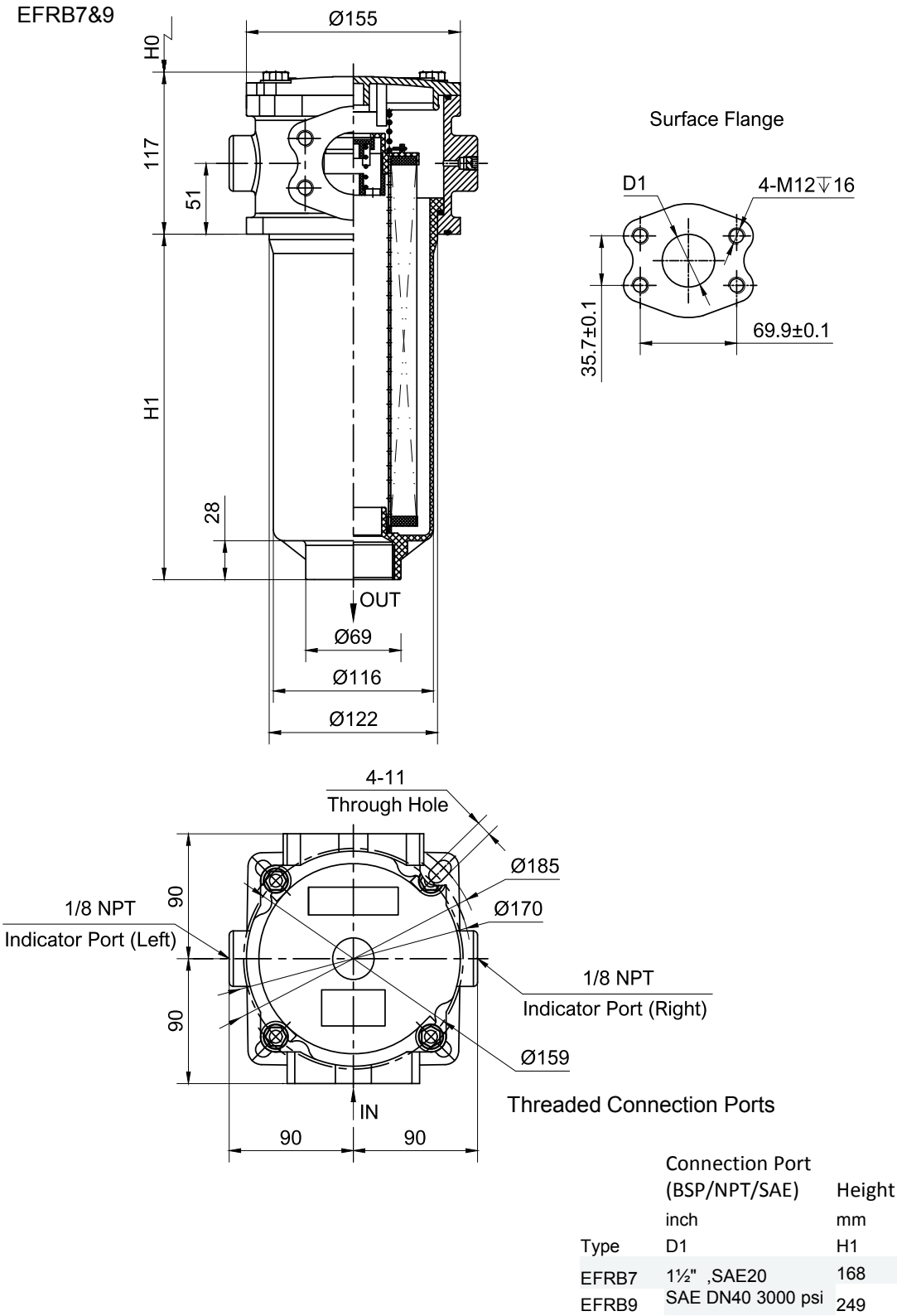


Threaded Connection Ports

Type	Connection Port (BSP/NPT/SAE) inch	Height mm	location
EFRB3.2	D1 3/4"	H1 122	H0 135
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

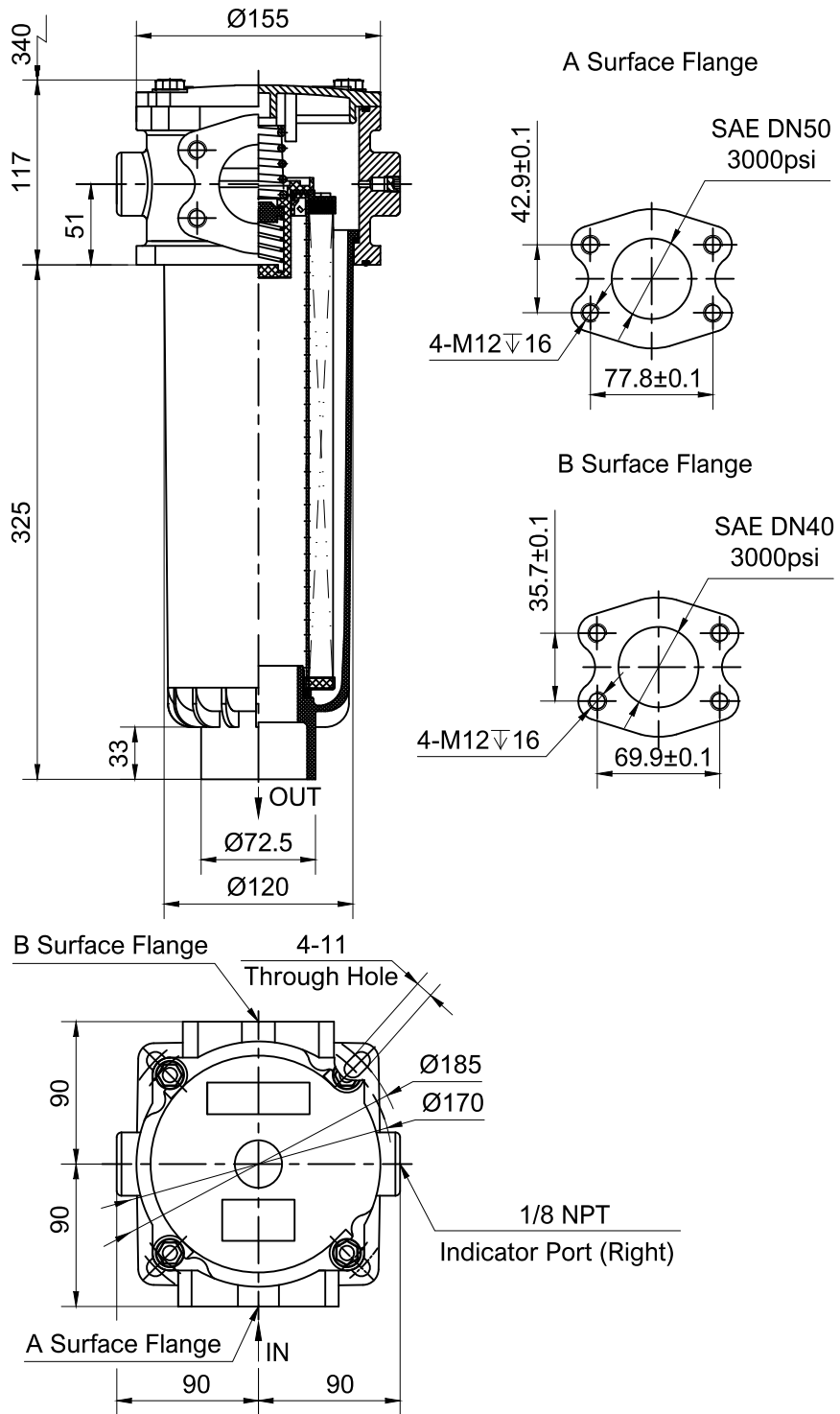
EFRB7&9



EFRB Return Filter Series

Technical Drawings and Dimension

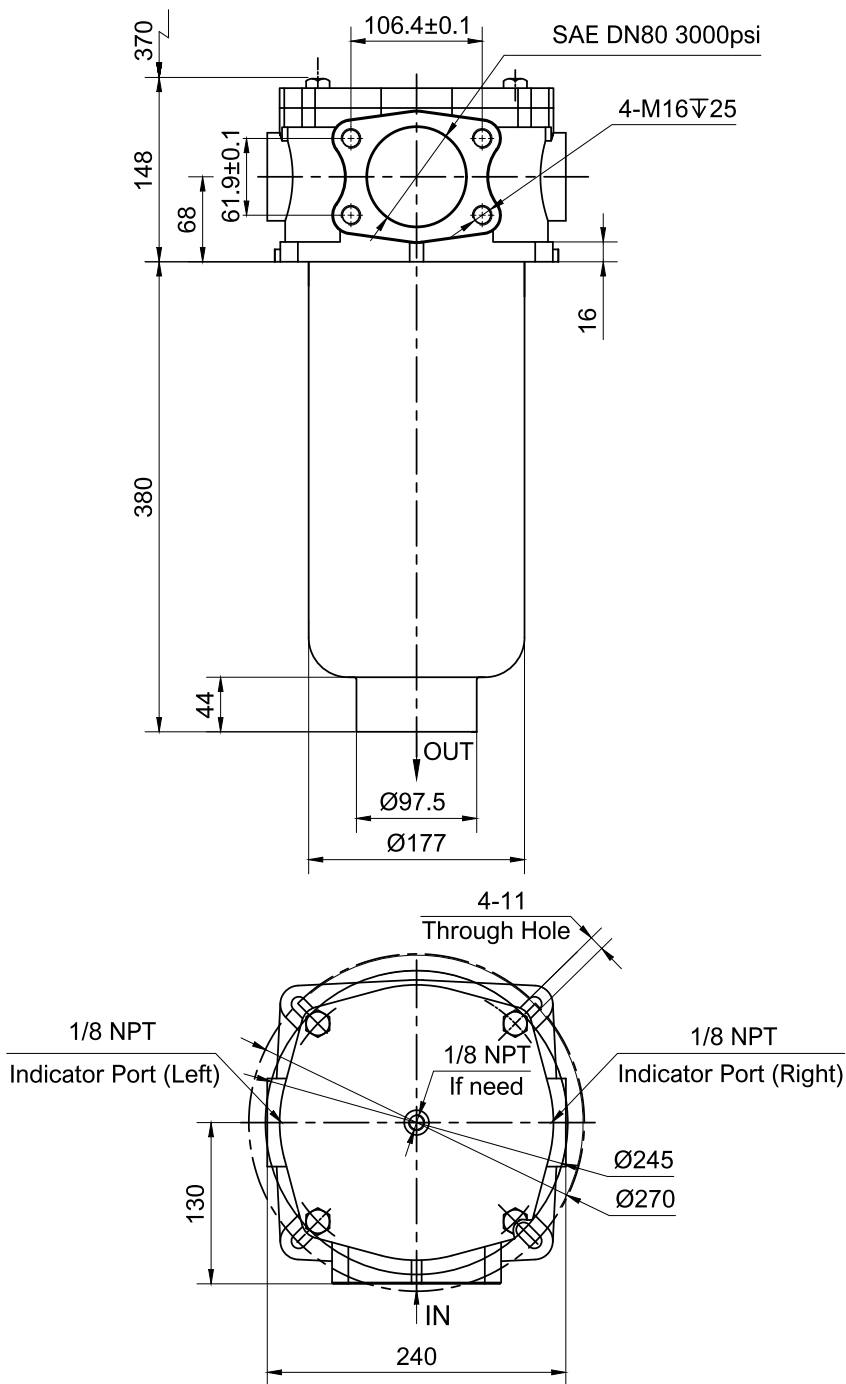
EFRB10



EFRB Return Filter Series

Technical Drawings and Dimension

EFRB 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	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	E Media Material
5.1	160 l/min	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 21µm 10 bar
		W25 Wire Mesh 25µm 10 bar
		W60 Wire Mesh 60µm 10 bar
		W90 Wire Mesh 90µm 10 bar
B Connection Ports		F Indicator
A08 SAE08		Connection
A12 SAE12		0 No
A16 SAE16		PZ 0~4bar Axial pressure gauge 1/8NPT Thread EFRB1~5.1&10
BB BSP ½"		R15 1.5 bar Pressure Switch 1/8NPT Thread EFRB1~5.1&10
BC BSP ¾"		
BD BSP 1"		
NB NPT ½"		
NC NPT ¾"		
ND NPT 1"		
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

7	250 l/min
9	330 l/min
10	400 l/min
11	500 l/min

B Connection Ports

A24	SAE24
BF	BSP 1-½"
NF	NPT 1-½"
FE	(3000psi) SAE DN40
FF	(3000psi) SAE DN50
FH	(3000psi) SAE DN80

C Seal

B	NBR
V	FPM

D By-pass Valve

00	No
06	1.7 bar (EFRB10)
08	3 bar (EFRB7, 9, 11)

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	21µm	10 bar
W25	Wire Mesh	25µm	10 bar
W60	Wire Mesh	60µm	10 bar
W90	Wire Mesh	90µm	10 bar

F Indicator

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

00	NO	Connection
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

Notes

[illegible]