

SERIES
SF2-250
SUCTION FILTER



MPFILTRI[®]
filtri per oleodinamica



Flow rate to 160 l/min

Description

SF2 250

The SF2 series suction filter are designed for reservoir side-wall applications.

This completely new design of filter allows the filter element to be replaced without having to drain the oil from the reservoir.

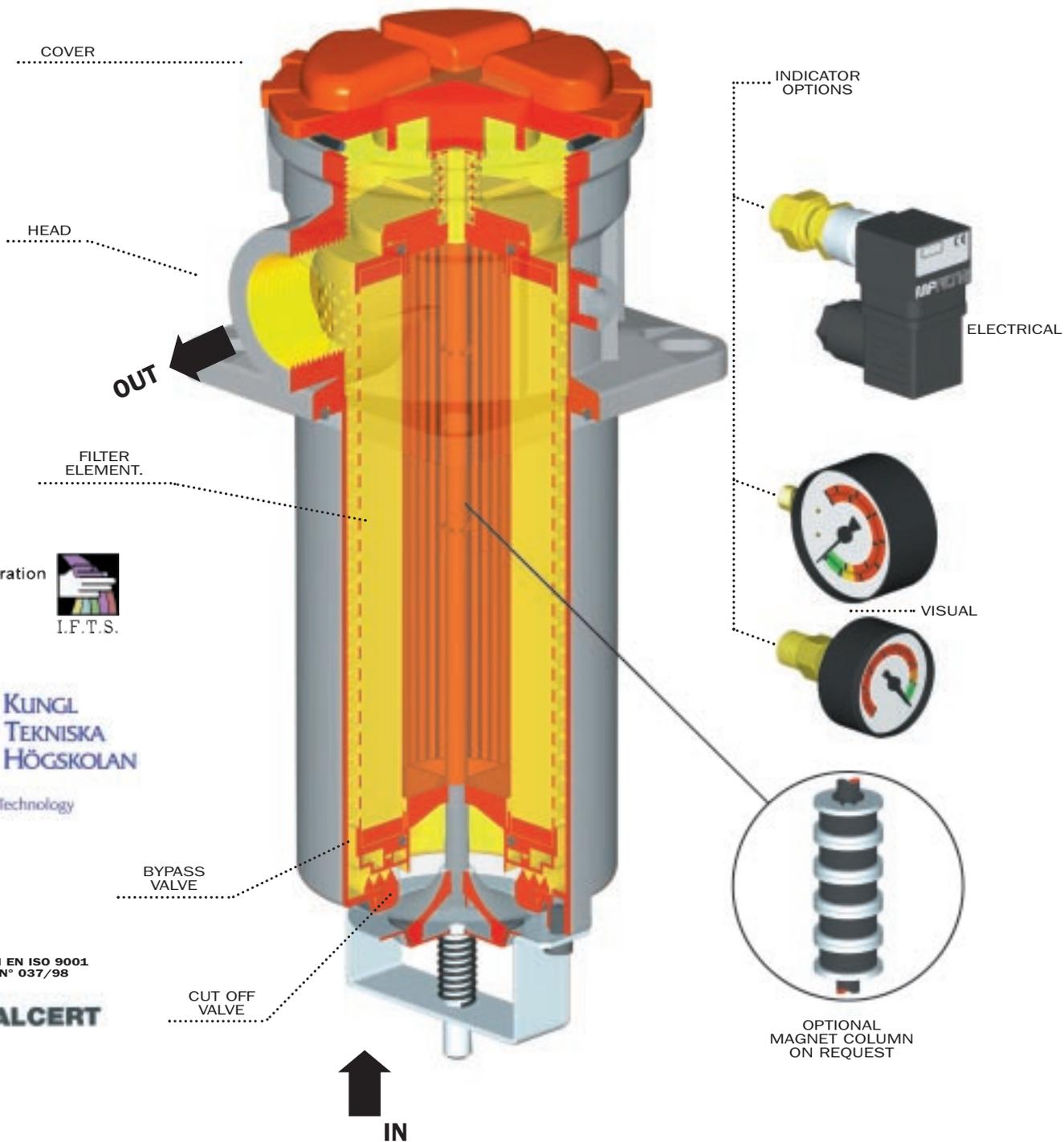
Unscrewing the filter cover operates a closing valve

within the filter preventing oil loss from the reservoir.

The SF2 250 filter uses a vacuum gauge or electrical vacuum switch for filter element indication.

These filters are supplied complete with bypass valve.

These filters are particularly suitable for power pack, mobile, construction, and industrial machinery applications.



Institute of Filtration
(France)
I.F.T.S.

KUNGL
TEKNISKA
HÖGSKOLAN
Royal Institute of Technology

UNI EN ISO 9001
N° 037/98
ITALCERT

Filter element:

Materials

End caps:

Nylon

Support tube:

Steel

Support frames:

Expanded metal

Element material Nominal filtration

M Series

Square wire mesh (filtration degree is defined in microns by the maximum diameter of a sphere corresponding to the mesh size).

Filtering area Filter elements

Type SF2	250
M25	1980
M60	1980
M90	1980
M250	1980

Values in cm²

Filter body:

Materials

Head

Pressure die cast aluminium

Seals

A Series: Nitrile (Buna-N)
V Series: Viton

Cover

Nylon

Indicator

Brass

Working temperature

From -25 to +110°C
For temperature outside this range, please consult our Sales Network Organization

Bypass valve Setting pressure

Bypass valve, differential opening pressure:

30 kPa ± 10%

Compatibility with fluids

Filter head and bowls

- compatible for use with:
- mineral oils (types HH-HL-HM-HR-HV-HG as per ISO 6743/4)
 - water-based emulsions (types HFAE-HFAS as per ISO 6743/4)
 - synthetic fluids (types HS-HFDR-HFDS-HFDU as per ISO 6743/4)
 - water-glycol (types HFC as per ISO 6743/4)

Ask for anodised version

Filter elements

As per ISO 2943; suitable for mineral oils (types HH-HL-HM-HR-HV-HG as per ISO 6743/4) synthetic fluids (A and M series only) (types HS-HFDR-HFDS-HFDU as per ISO 6743/4)

For water-based emulsions (type HFAE-HFAS as per ISO 6743/4) and fluids other than those mentioned, please consult our Sales Network Organization.

Seals

A Series

Nitrile (Buna-N) compatible with mineral oils (types HH-HL-HM-HR-HV-HG as per ISO 6743/4) water-based emulsions (types HFAE-HFAS as per ISO 6743/4)

V Series

Viton compatible with synthetic fluids (types HS-HFDR-HFDS-HFDU as per ISO 6743/4)

Types of indicator

Description:
SF2 250 series filters are fitted with visual and electrical indicators.

Visual indicator

V Series (radial)
V0 Series (axial)

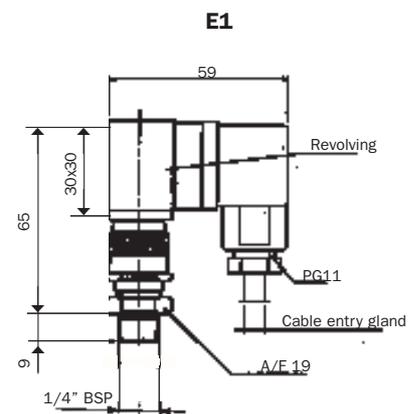
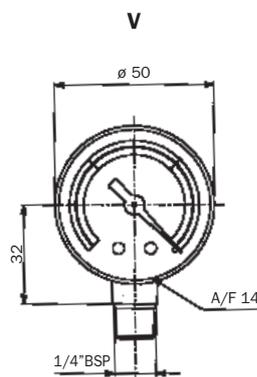
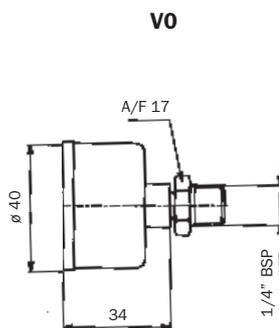
vacuummeter: scale 0÷76 cmHg
vacuummeter: scale 0÷76 cmHg

Electrical indicator

E1 Series:
vacuum switch with change-over contacts (setting std. 20kPa ± 10%) (adjustable setting: 15 to 90 kPa)

Operational information:

Max voltage: 250 V 50÷60 Hz
Max current: 5 A resistive,
2 A inductive.
Protection degree IP65



Selection

& installation information

Filter element types

M Series

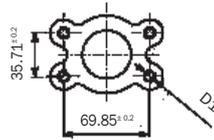
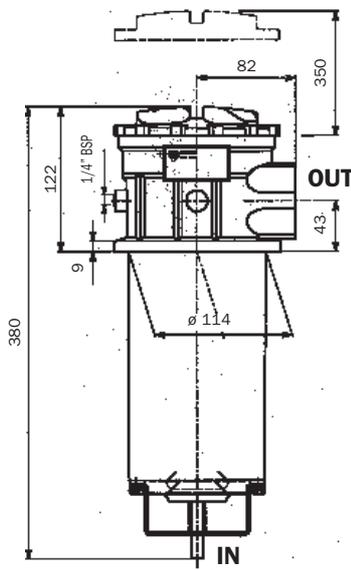
Metal mesh media, available in 25, 60, 90, 250 micron
 Example - **M25, M60, M90 and M250**

Please refer to individual pressure drop curves to obtain filter assembly pressure drop information

The following filter sizing recommendations are based using a mineral oil fluid at 30 mm²/s (cSt) with a maximum total filter assembly (housing and filter element) pressure drop of **8 kPa (0,08 bar)**.

SF2 SERIES 250 SIZE

SF2 250



Filter element	Flow rate l/min option 1"	Flow rate l/min option 1 1/4"	Flow rate l/min option 1 1/2"	Weight kg **
M25	100	140	140	2.7
M60	100	145	150	
M90	100	150	160	
M250	100	150	160	

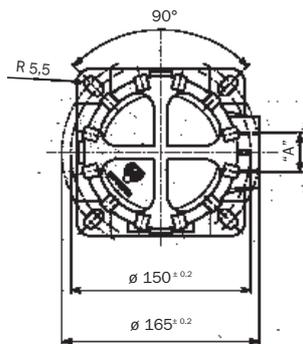
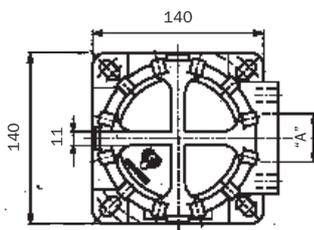
* Flow rates are based using a mineral oil fluid at 30 mm²/s.
 ** Weight including filter element

Thread connections

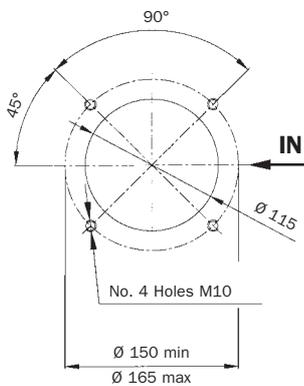
Type	A	Type	A
G1	1 1/2" BSP	G6	SAE 20
G2	1 1/2" NPT	G7	1" BSP
G3	SAE 24	G8	1" NPT
G4	1 1/4" BSP	G9	SAE 16
G5	1 1/4" NPT		

Flange connections

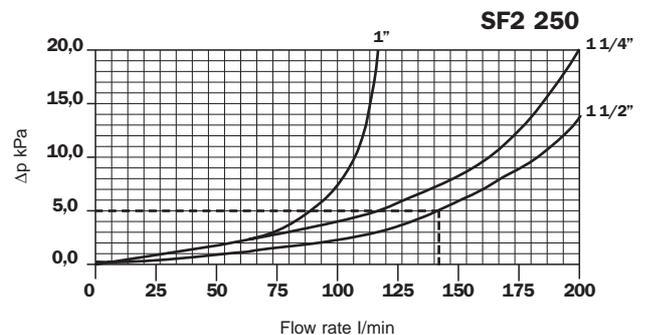
Type	A	D1
F1	1 1/2" SAE 3000PSI/M	M12
F2	1 1/2" SAE 3000PSI/UNC	1/2" UNC



HOLES ON THE TANK



Filter housing pressure drop



Pressure drop information

General

Pressure drop versus flow rate curve information for both housing and filter elements is in accordance with ISO 3968

Filter assembly pressure drop - $\Delta p_{\text{Total}} = \Delta p_{\text{Housing}} + \Delta p_{\text{Filter element}}$

Housing pressure drop - The housing pressure drop is proportional to the fluid density

Filter element pressure drop - Filter element pressure drop is proportional to kinematic viscosity therefore always check the fluid operating temperature and fluid type to obtain the working viscosity according to the following formula:

$$\Delta p_1 \text{ Filter element} = (\text{working viscosity/brochure viscosity}) \times \Delta p \text{ filter element}$$

Brochure viscosity = 30 mm²/s cSt

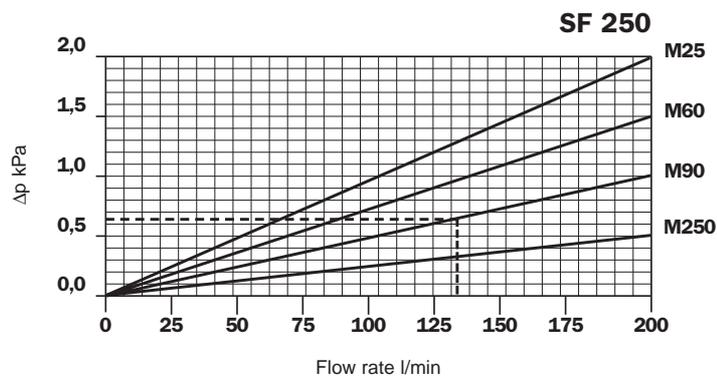
1 bar = 100 kPa

Filter assembly sizing example

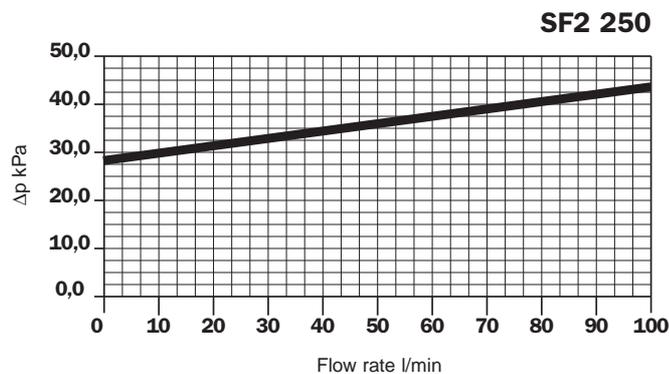
Selection

- Customer requires a 140 l/min filter assembly • 1" 1/2 port size
- Mineral oil fluid: ISO VG 46 (46 mm²/s (cSt) at 40°C)
- M90 - 90 micron filtration
- **Housing pressure drop** - SF2 250 (1" 1/2 port size) with 140 l/min $\Delta p = 5 \text{ kPa}$ (see curve on page 5)
- **Filter element pressure drop** (brochure viscosity) - SF2 250 M90 N with 140 l/min $\Delta p = 1.4 \text{ kPa}$ (see curve on page 6)
- **Filter element pressure drop** (working viscosity) - With 46 mm²/s (cSt) $\Delta p_1 = 0.6 \times (46/30) = 1.1 \text{ kPa}$
- **Filter assembly pressure drop** $\Delta p_{\text{Total}} = \Delta p_{\text{Housing}} + \Delta p_1 \text{ Filter element} = 5 + 1.10 = 6.1 \text{ kPa}^*$ { * Acceptable pressure drop as per our recommendations

Filter element pressure drop



Bypass valve pressure drop



Ordering code example

SF2

250

A

G1

H

M25

V

This example shows how order a filter assembly with features based on the customer request.

Nominal size

250

Filter condition indicator

S	With threaded hole only
T1	With hole + plug
VO	Visual (axial vacuumeter)
V	Visual (radial vacuumeter)
E1	Electrical (change-over contacts vacuumeter)

Seals

A	Nitrile (Buna-N)
V	Viton

Filter elements

M25	Square wire mesh
M60	
M90	
M250	

Port option

Type	SF2 250
G1	1 1/2" BSP
G2	1 1/2" NPT
G3	SAE 4
G4	1 1/4" BSP
G5	1 1/4" NPT
G6	SAE 20
G7	1" BSP
G8	1" NPT
G9	SAE 16
F1	1 1/2" SAE 3000 PSI/M
F2	1 1/2" SAE 3000 PSI/UNC

Options

H	Without By-pass, without magnet
R	With By-pass and magnet
S	With By-pass, without magnet
Q	Without By-pass and magnet

Seals (only for filter elements)

N	Buna N
V	Viton

SF

250

M25

N

This example shows how order a filter element with features based on the customer request

Replacement element

MP Filtri - Filtration products will only be guaranteed if original MP Filtri replacement elements and spares are used

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