

# FS-7 series

Side wall mounting suction filters



## Technical Information

### Housing

**Connection Ports:** 1" - 1 1/4" - 1 1/2" BSP (other thread options on request)  
1 1/2" SAE J518 - 3000/M12

**Materials:** Cover: polyamide  
Housing: aluminium alloy  
Seal: Buna-N

**By-pass:** No by-pass or 0,3 bar setting (4,35 psi)

### Element

**Filter Media:**  
Cellulose 10 - 25  $\mu\text{m}_{(C)}$  (acc. to ISO 16889)

Wire mesh 60 - 125 - 250  $\mu\text{m}$

Filtrec elements are tested according to ISO 2941, ISO 2942 and ISO 23181

### Common

**Working temperature:** -25°C +100°C (-13°F +212°F)

**Fluid compatibility** (acc. to ISO 2943):

Full with HH-HL-HM-HV (acc. to ISO 6743/4).

For use with other fluid applications please contact Filtrec Customer Service ([info@filtrec.it](mailto:info@filtrec.it)).

# Ordering information

MEDIA	
000	no element
C10	cellulose $\beta_{10} \geq 2$
C25	cellulose $\beta_{20} \geq 2$
T60	wire mesh 60 $\mu\text{m}$
T125	wire mesh 125 $\mu\text{m}$
T250	wire mesh 250 $\mu\text{m}$

	NOMINAL SIZE	MEDIA	SEALS	CONNECTION	BY-PASS	MAGNET	INDICATOR PORT	INDICATOR
<b>Filter assembly FS-7</b>	<b>41</b>	<b>C10</b>	<b>B</b>	<b>B7</b>	<b>B</b>	<b>M</b>	<b>P</b>	<b>S1</b>
<b>Filter element S7</b>	<b>41</b>	<b>C10</b>	<b>B</b>					

CONNECTION	
B5	1" BSP
B6	1 1/4" BSP
B7	1 1/2" BSP
F7	1 1/2" SAE J518 - 3000/M12
C5	double port 1"+1" BSP
C6	double port 1 1/4"+1" BSP
C7	double port 1" 1/2"+1" BSP
G7	double port F7+1" BSP

For different thread options please check availability with Filtrec Customer Service.

BY-PASS	
0	no by-pass
B	0,3 bar / 4,35 psi

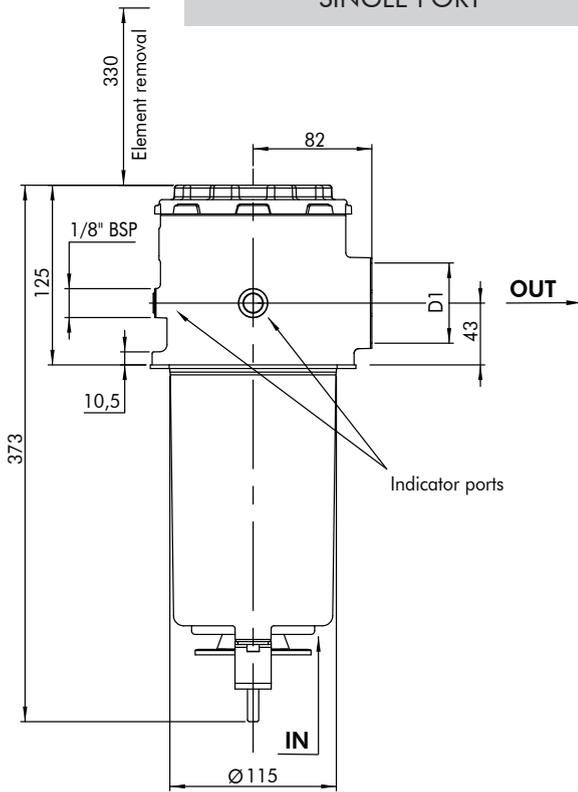
MAGNET	
0	no magnet
M	magnet

INDICATOR PORT	
P	rear (standard)
T	rear - right - left

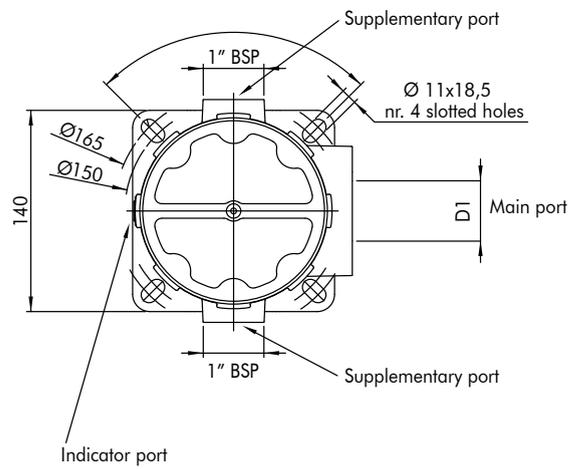
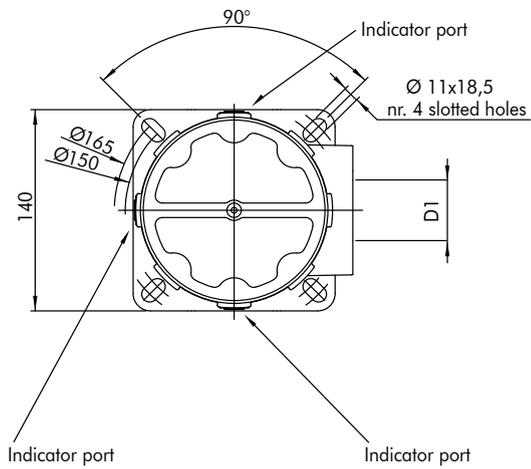
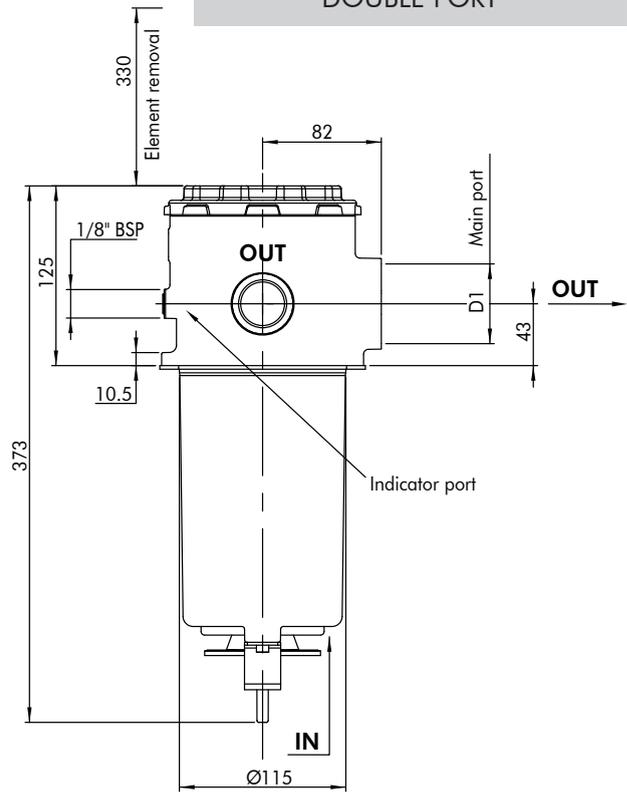
INDICATOR	
00	no indicator
S1	vacuum gauge 0 ÷ -1 bar / -14,5 psi
S13	vacuum switch SPDT -0,2 bar / -2,9 psi

# Overall dimensions

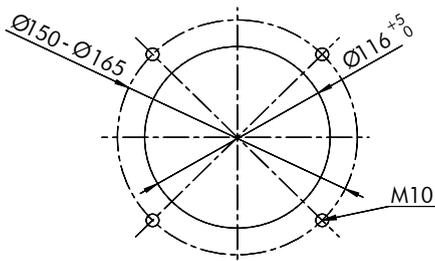
SINGLE PORT



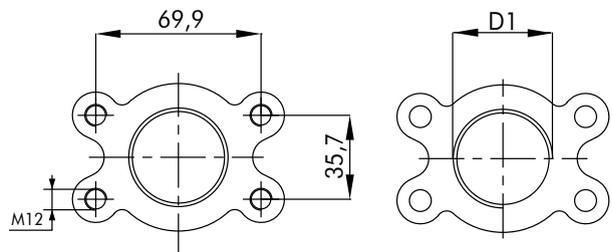
DOUBLE PORT



TANK MOUNTING PATTERN



D1 MAIN PORT



FLANGE CONNECTION  
F7=1 1/2" SAE J518 - 3000/M12

THREAD CONNECTION

B5	1" BSP
B6	1 1/4" BSP
B7	1 1/2" BSP

## Pressure Drop diagrams

The total Pressure Drop ( $\Delta p$ ) value is obtained by adding the  $\Delta p$  values of filter housing and filter element at the given flow rate. This ideally, should not exceed 0,15 bar (2,2 psi).

### PRESSURE DROP THROUGH THE FILTER HOUSING

The Pressure Drop through the filter housing is governed by the port, not the bowl length and the oil viscosity.

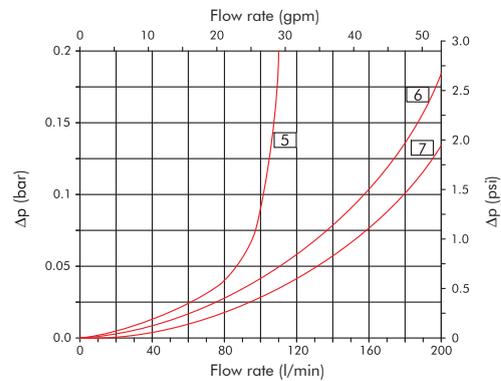
### PRESSURE DROP THROUGH THE CLEAN FILTER ELEMENT

The Pressure Drop through the filter element is related both to the internal diameter of the filter element and to the filter media; this value is affected by the oil viscosity in a roughly proportional way: e.g. when the  $D_p$  value from the curve is 0,2 bar and a 46 cSt oil is used, the corresponding value is 0,31 ( $=0,2 \times 46/30$ ) bar.

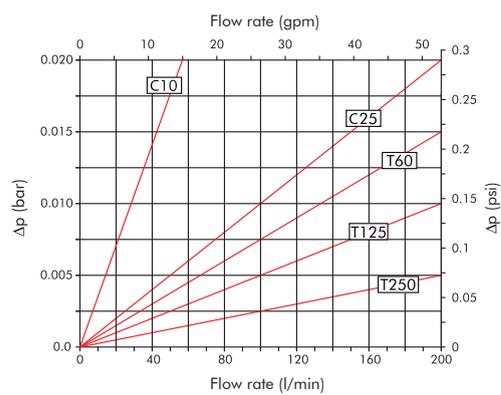
### PRESSURE DROP THROUGH THE BY-PASS VALVE

The by-pass valve is a safety device to prevent element collapse in case of differential pressure peaks due to flow peaks, cold start conditions or when the clogged element is not replaced in a timely manner.

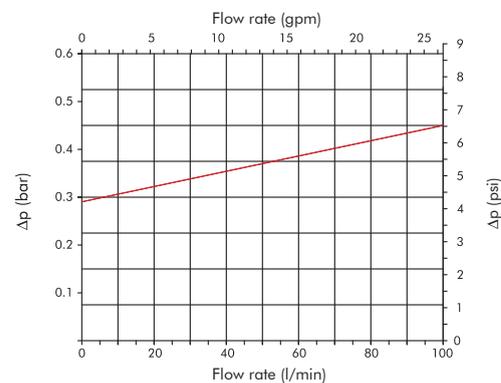
#### Housing



#### Filter element



#### By-pass valve



The above diagrams have been obtained at the FILTREC laboratory, according to the ISO 3968 specification, with mineral oil having 30 cSt viscosity and 0,86 Kg/dm<sup>3</sup> density.

In case of discrepancy, please check contamination level, viscosity and features of the oil in use and the sampling points of the differential pressure.

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## Clogging indicator

The Pressure Drop ( $\Delta p$ ) through the filter increases during the system operation, due to the contaminant retained by the filter element.

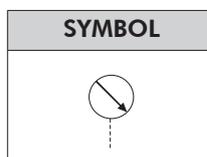
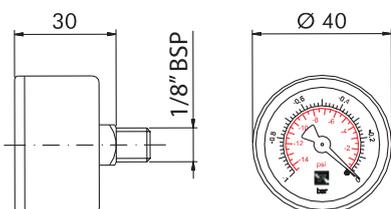
The filter element must be replaced when the indicator shows, before the  $D_p$  reaches the by-pass value setting.

N.B. in cold start conditions a false alarm can be caused by higher oil viscosity due to low temperature; the indicator alarm must be considered at normal working temperature only.

The clogging indicator registers the pressure downstream the filter element:

- with the VISUAL indicator a value of pressure lower than -0,2 bar indicates the need of element replacement.
- with the ELECTRIC indicator an electrical switch is activated when the set value -0,2 bar is reached.

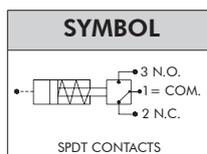
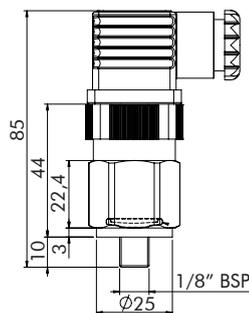
### VACUUM GAUGE



CODE	SCALE
S1	0 ÷ -1 bar (0 ÷ -14,5 psi)

Housing in black ABS material

### VACUUM SWITCH

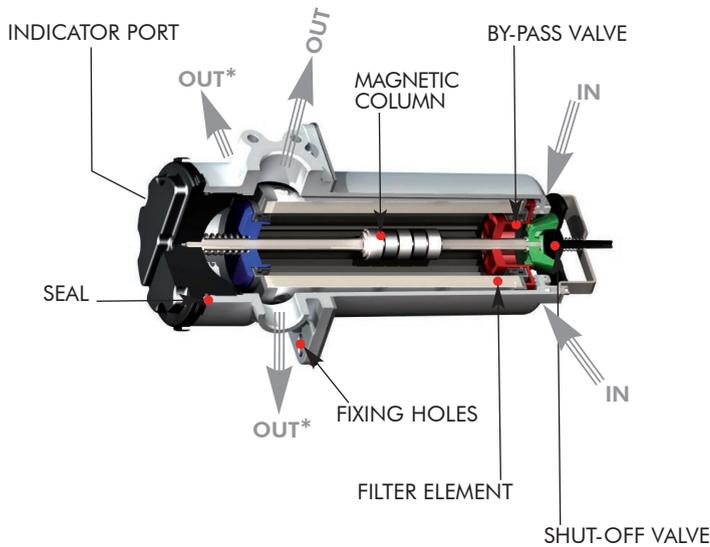


CODE	SETTING
S13	-0,2 bar (-2,9 psi)

- DC: 30 V – 4 A inductive, 3 A resistive
- AC: 250 V 3 A inductive, 2 A resistive
- Protection: IP65, connector DIN43650
- SPDT contacts

N.B. it can be used as N.O. contacts or N.C. contacts switch only, simply connecting 1 and 3 or 1 and 2 only, respectively.

## User Tips



\* SUPPLEMENTARY PORT

SEAL PART NUMBER	
	<b>NBR</b>
FS-7-41	07.010.00238

INDICATOR TIGHTENING TORQUE	
S1/S13	15 Nm

### Installation

Make sure that the filter is properly mounted on the reservoir and connected to the suction port of the pump.

Make sure that the filter is completely screwed, properly secured using the threaded fixing holes on the filter head; verify that no tension is present on the filter after mounting.

Make sure that enough space is available for element replacement and that the clogging indicator is in a easily viewable position. If an electrical indicator is used, make sure that it is properly wired.

Never run the system without a filter element fitted. We recommend the stocking of a spare FILTREC filter element for timely replacement when required.

### Operation

Make sure that the filter works within the conditions of pressure, temperature and fluid compatibility given in the first page of this data sheet.

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).

If no clogging indicator is mounted, make sure that the filter element is replaced according to the system manufacturer's recommendations.

### Maintenance

Before opening the filter housing, ensure that the system is switched off and there is no residual pressure in the filter.

Unscrew the cover by turning it anticlockwise.

Remove the dirty filter element pulling it carefully; replace it with a FILTREC element, verifying the part number, particularly concerning the micron rating. When fitting the new element, open the plastic protection on the top and insert the element over the spigot in the filter head, then remove completely the plastic protection.

Check the gasket's conditions and replace if necessary; lubricate the threads and screw completely the cover in the filter housing by turning it clockwise.

N.B. The used filter elements cannot be cleaned and re-used.

### PED Compliance

FS-7 filters conform to PED 97/23/CE norm, article 3 section 3, and so they can be used with fluids of group 2 (liquids with steam pressure < 0,5 bar at the maximum allowable temperature, article 3, section 1.1(b) – sub-section II).

### WARNING

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

### Disposal of filter elements

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.





**FS-7 series**

[www.filtrec.com](http://www.filtrec.com)



Technical information may change without notice