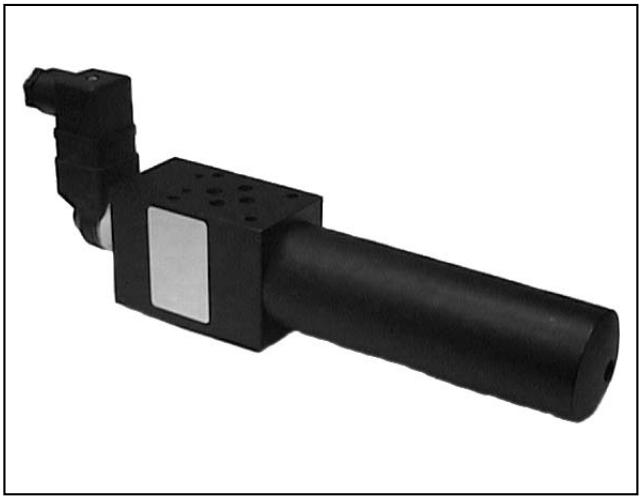
DUPLOMATIC
HYDRAULICS



FPHM

PRESSURE FILTER

SERIES 10

MODULAR VERSION

p max **320** bar

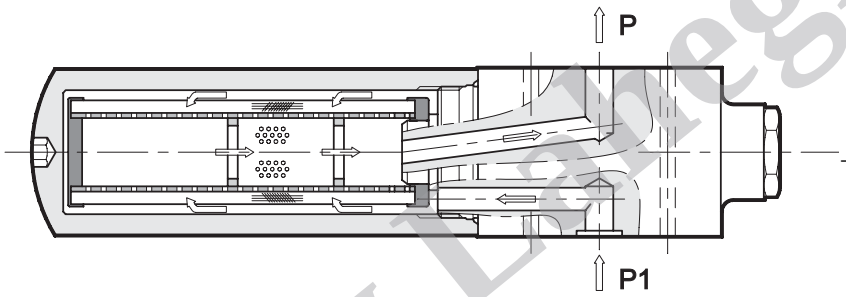
Q max (see performance ratings table)

OPERATING PRINCIPLE

— The FPHM filters are designed for the modular mounting directly under proportional valves or servovalves with CETOP and ISO interface.

— They are available in two nominal dimensions with CETOP 03 (GN6) and CETOP 05 (GN10) mounting surface.

— FPHM filters are designed for working pressures up to 320 bar. The filter elements are made of high efficiency filtering materials and are available with three different filtration degrees and with a collapsing differential pressure = 210 bar:
F05 = 5 µm absolute ($ß_5$ > 100 - NAS 1638 class 6)
F10 = 10 µm absolute ($ß_{10}$ > 100 - NAS 1638 class 7)
F25 = 25 µm absolute ($ß_{25}$ > 100 - NAS 1638 class 8)



— All theFPHM filters are supplied without by-pass valve and are designed to incorporate a visual-differential or a visual-electric clogging indicator to be ordered separately (see par. 5).

TECHNICAL SPECIFICATIONS

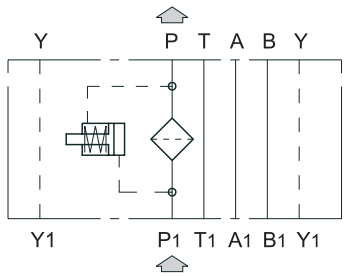
Filter code	Dimensions	Mass [kg]	Rated flow (indicative) [l/min]		
			F05	F10	F25
FPHM3	CETOP 03	2,5	12	13,5	16
FPHM5	CETOP 05	4,2	22	25	28

NOTE 1: The flow rates stated in the table correspond to a 3 bar pressure drop measured with mineral oil of viscosity 36 cSt at 50°C.
As for a different viscosity range, see NOTE 2 - par. 2.2.

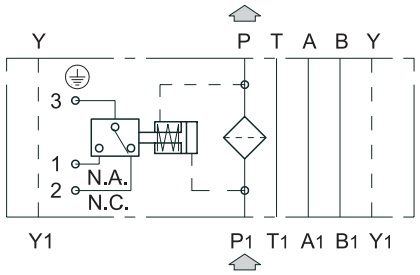
Maximum operating pressure	bar	320
Collapsing differential pressure of the filter element	bar	210
Ambient temperature range	°C	–25 ÷ +50
Fluid temperature range	°C	–25 ÷ +110
Fluid viscosity range	cSt	10 ÷ 400

HYDRAULIC SYMBOL

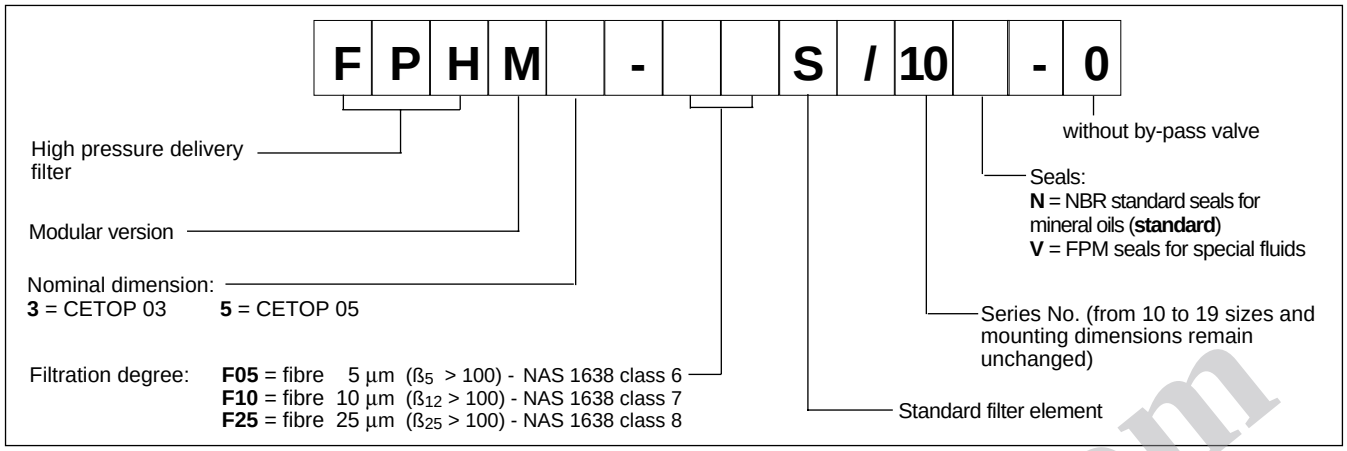
Modular filter with indicator VM type



Modular filter with indicator EM type

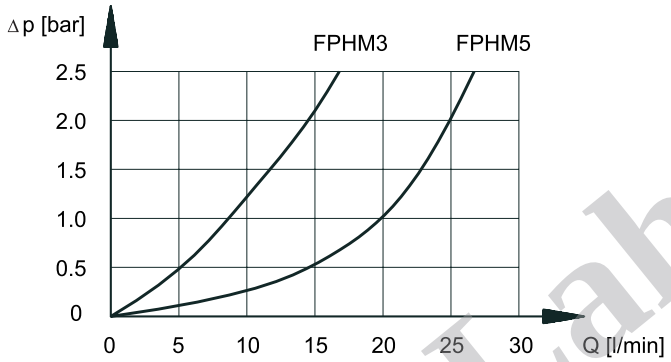


1 - IDENTIFICATION CODE

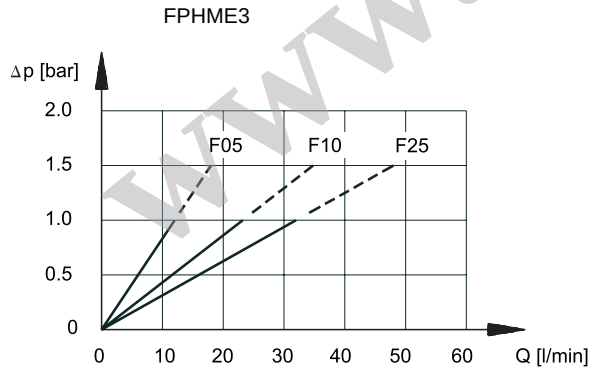


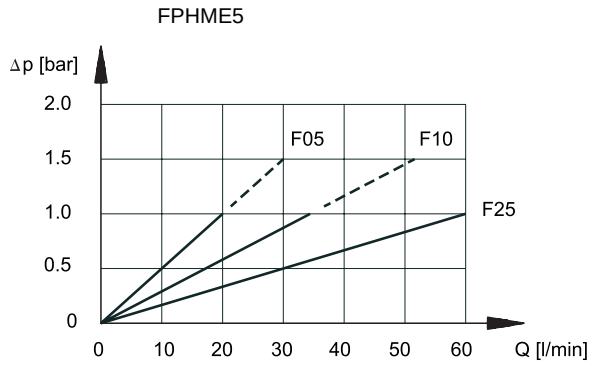
2 - CHARACTERISTIC CURVES (values measured with viscosity of 36 cSt at 50°C)

2.1 - Pressure drops through the filter body



2.2 - Pressure drops through FPHME filter element





NOTE 2: The filter size has to be selected so that with the nominal flow rate the pressure drop is lower than 0.8 bar.
The total pressure drop through the filter is given by adding the body pressure drop values to those of the filter element.
As for fluids whose viscosity degree at a specific operating pressure is different from 36 cSt, the filter total pressure drop has to be changed according to the following ratio:

total Δpl value = body Δp value + (realΔp value of the filter element x real viscosity value (cSt) / 36)

real Δp value of the filter element = value obtainable through the diagrams in par. 2.2

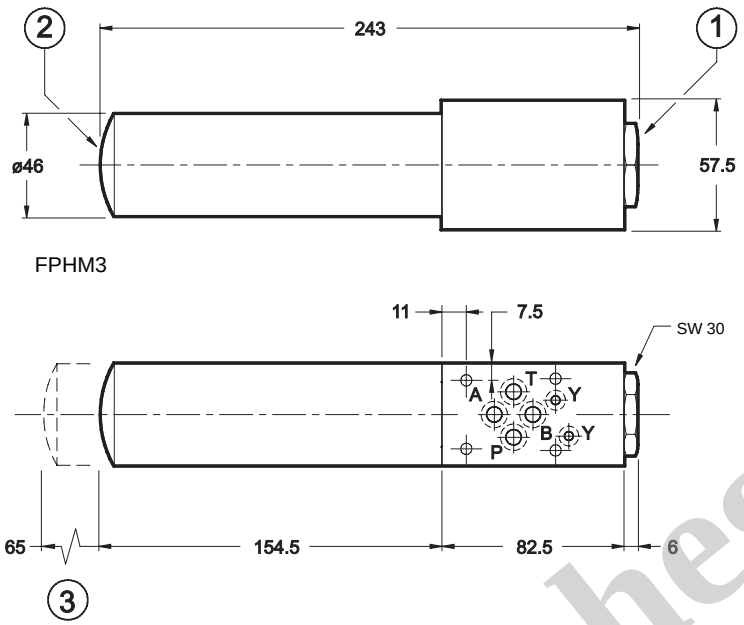
Such ratio is valid for a viscosity value up to 200 cSt.
For a higher viscosity please consult our technical department.

3 - HYDRAULIC FLUIDS

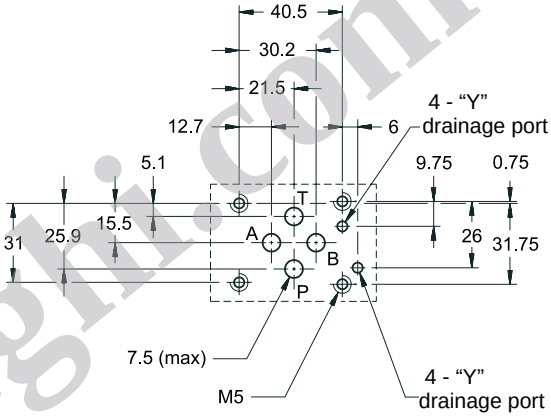
Use mineral oil-based hydraulic fluids type HL and HLP according to ISO 6743/4.
For use with other types of fluids such as HFA, HFB, HFC, HFD, please consult our Technical Department.

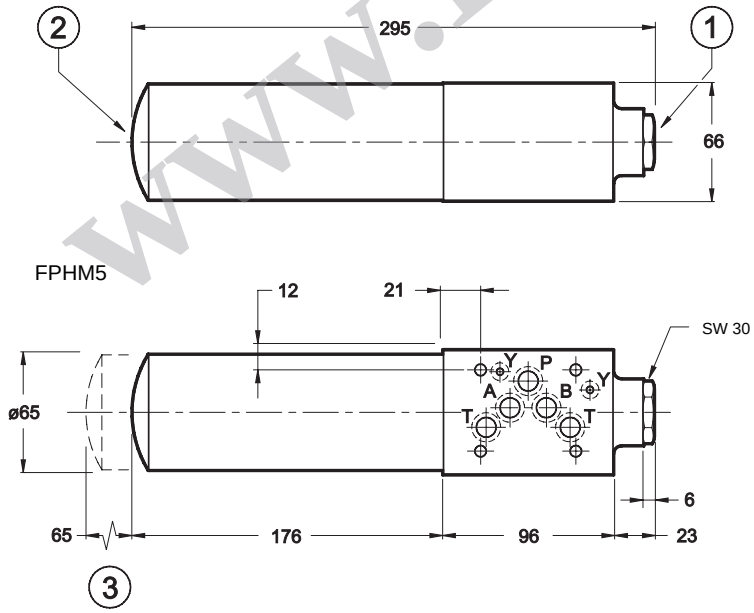
4 - OVERALL AND MOUNTING DIMENSIONS

dimensions in mm

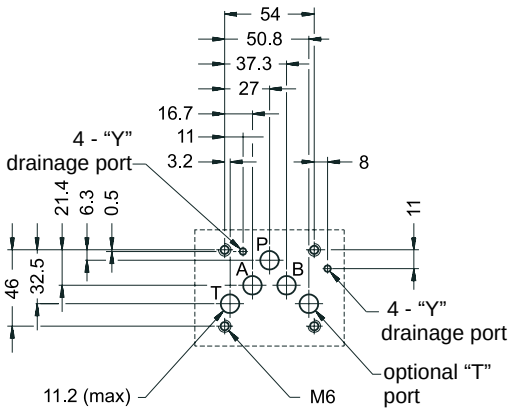


FPHM3 MOUNTING SURFACE





FPHM5 MOUNTING SURFACE

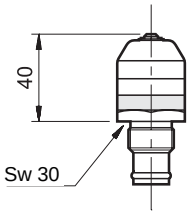


1	Clogging indicator port: M20 x 1,5
2	Wrench seat facility for housing removal: countersunk hex spanner 10
3	Mounting surface with sealing rings FPHM3: n. 4 OR 108 n. 2 OR 2025 FPHM5: n. 5 OR 2050 n. 2 OR 106
4	Filter element removal space

5 - CLOGGING INDICATORS

The filters are all designed to incorporate clogging indicators, which have to be ordered separately.

5.1 -Visual indicator for modular filters
Identification code: VM/10

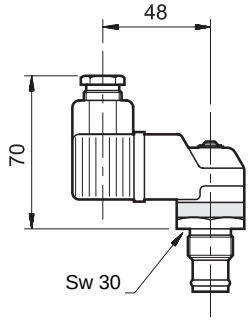


This indicator measures the differential pressure between the filter input and output.
The indicator is supplied with coloured bands, which informs you about the clogging condition of the filter element:

GREEN: efficient filter element $\Delta p < 8$ bar (± 10%)

RED: the filter element has to be replaced $\Delta p > 8$ bar (± 10%)

5.2 - Electric-visual indicator for modular filters
Identification code: EM/10

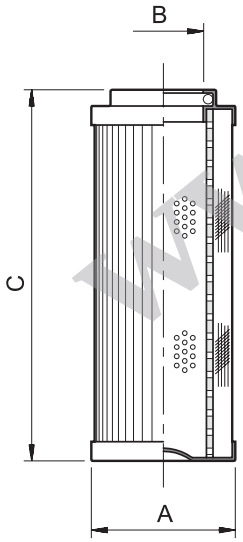


This indicator, apart from giving a visual indication, for example the VM model, operates by switching an electric contact when the filter element has reached the clogging limit.
The contact can be wired in an open or closed condition (see the hydraulic symbol).

TECHNICAL SPECIFICATIONS

Differential operating pressure	bar	8
AC power supply		
Max operating voltage	VCA	250 50/60 Hz
Max load on the contacts (inductive or resistive)	A	5
DC power supply		
Max operating voltage	VCC	125
Max. load on the contacts - resistive (with V at 30-50-75-125 VDC) - inductive	A	 2 - 0,5 - 0,25 - 0,2 2 - 0,5 - 0,25 - 0,03
Electric connector		DIN 43650
Class of protection according to IEC 144 Atmospheric agents		IP65

6 - FILTER ELEMENTS



FILTER ELEMENTS IDENTIFICATION CODE

F	P	H	M	E		-			S	/	10	

Filter element for FPHM modular fillter

Nominal dimension:
3 = CETOP 03
5 = CETOP 05

Filtration degree : **F05** = fibre 5 µm
F10 = fibre 10 µm
F25 = fibre 25 µm

N = NBR seals for mineral oils (**standard**)
(**V** = FPM seals for special fluids upon request)

Series No. (from 10 to 19 sizes and mounting dimensions remain unchanged)

Standard filter element

Filter element code	ØA	ØB	C	Average filter surface [cm²]
FPHME3	33	20	100	270
FPHME5	45	25	115	475

DUPLOMATIC HYDRAULICS

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