MPS Series

Description

The **MPS** spin-on filter series is a complete product range suitable, for both suction and return applications. Utilising spin-on canisters, the MPS series are quick and easy to service and provide a 'clean' solution when changing elements.
The filter elements are either resin-impregnated paper (ßx>2), glass fibre (ßx[3] 200) or square wire mesh.
The unique filter head is designed for both European CS and American CG standard canister series. One head design series accomodates both styles of elements.
Also available is a new design utilizing a pressure differential visual and electrical indicators - ideal for lubrication applications.
MPS filters are specifically designed for contamination control in hydraulic and lubrication circuits for mobile applications, agricultural and machine tool systems.

The **CW** series of canister removes water from oil while filtering the oil at the same time.
Water absorbent polymers up to 800 times their own weight, provide this major feature.
Water holding capacities: - CW 050 - 240 ml. CW 150 - 788 ml.

DIFFERENTIAL INDICATORS
For Use with series "1" filter heads.

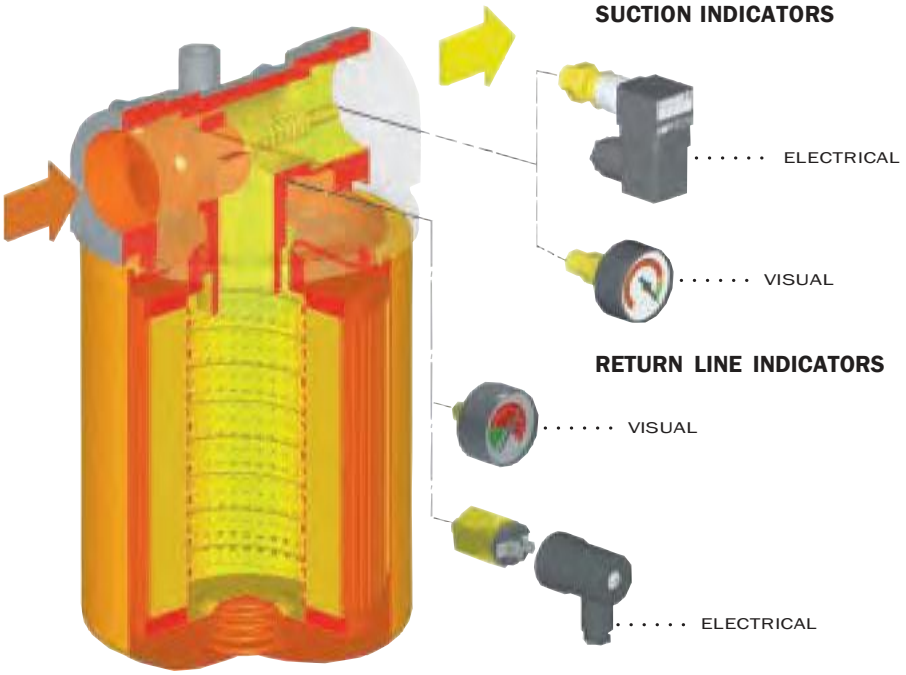
New

absolute filter elements
independently tested
in the following Institutes:

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

Kungl Tekniska Högskolan
Royal Institute of Technology

For Use with series "0" filter head.



UNI EN ISO 9001
N° 037/98
ITALCERT

Filter element:

Materials

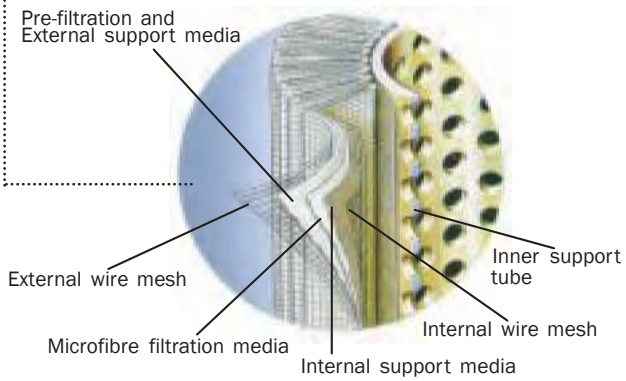
End caps:
Galvanized steel

Support tube:
Galvanized steel

Support frames:
Galvanized steel with an epoxy coating

A Series

Inorganic microfibre



MP Filter elements - Conform to the following ISO standards

ISO 2941 - Verification of collapse/burst resistance.
ISO 2942 - Verification of fabrication integrity and determination of the first bubble point.
ISO 2943 - Verification of material compatibility with fluids.
ISO 3723 - Method for end load test.
ISO 3724 - Verification of flow fatigue characteristics.
ISO 3968 - Evaluation of pressure drop versus flow characteristics.
ISO 16889 - Multi-pass method for evaluating filtration performance.

Element material Absolute filtration

A Series

Inorganic microfibre with acrilic support

Contamination retention
as per ISO 16889: Multi-pass test.

New improved ß 3 200 filter elements with greater efficiency and increased dirt holding capacity

Filter elements	Dimensions for ß (µm) values				Filtration ratios			D P (bar)
	ß 3 2 (50%)	ß 3 20 (95%)	ß 3 75 (98,7%)	ß 3 200 (99,5%)	ß2	ß10	ß20	
A03	-	2	2,4	3	20	> 10.000	> 10.000	7
A06	-	3	4,6	6	8	> 2.000	> 10.000	7
A10	3	6	7,8	10	1,5	3 200	> 10.000	7
A25	13	19	22	25	-	> 1,5	> 35	7

N.B. Other materials giving different degrees of filtration are available on request.

Filtering area Filter elements

Type CS-CG-CT	050	070	100	150
A03/A06	1900	3160	3950	5390
A10/A25	1900	3160	3950	5390

Values in cm²

Element material Nominal filtration

P Series

Resin - impregnated paper

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 CS-CG-CT	050	070	100	150
P10/P25	2440	4140	4300	5760
M25	1000	1270	1990	2400
M60	1000	1270	1990	2400
M90	1000	1270	1990	2400

Values in cm²

CW Series

Resin - impregnated paper

Type CW	050	150
P10/P25	2000	3050

Specification

Materials

Head
Aluminium

Bypass valve
Nylon

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

Indicator
Brass

Working temperature

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

Pressure filter body

Maximum working pressure up to 12 bar

Collapse pressure filter elements

4 bar

Bypass valve Calibration pressure

Bypass valve, differential opening pressure:
S series: 0,3 bar ± 10% (MPS series only)
R series: 1,75 bar ± 10%

Types of indicators for MPS series "0" (MPS 050-070-100...) and MST series

Description:
MPS series filters are fitted with indicators switching:
Suction filters at a pressure of: 20 kPa ± 10%
Line filters at a pressure of: 1,3 bar ± 10% (MPS series only)
Return filter at a pressure of: 1,3 bar ± 10% (MPS-MST series only)

1 Kpa = 0.01 bar

Visual indicator

Suction filter: (MPS series only)
VS vacuum switch — scale 0 - 76 cm Hg

Return and line filter
VA Pressure gauge — scale 0 - 12 bar
VR colour coded pressure gauge — scale 0 - 6 bar

Electrical indicator

Operational information:

Suction filter (MPS series only)
E0 Vacuum switch with change over contact
Switching at 20kPa ± 10%
Max voltage: 250V 50÷60 Hz
Max current: 5 A resistive, 2 A inductive
Protection degree IP65

Return filter
ER Pressure switch with N.O. contacts
EC Pressure switch with N.C. contacts
Switching at 1,3 bar ± 10%
Max voltage: 48V 50÷60 Hz
Max current: 0,5A resistive
0,2A inductive

Types of indicators for MPS series "1" (MPS 051-071-101-151-301-351)

MPS filter series 1 (051-071-101... and so on) are fitted with, differential style indicators.

Visual indicator

1V - Z1 Series for Filter with bypass set to 1,75 bar — switching at 1,2 bar ± 10%
V6 - Z6 Series for Filter without bypass — switching at 2 bar ± 10%

Electrical indicator

N1 Series for Filter with bypass set to 1,75 bar — switching at 1,2 bar ± 10%
N6 Series for Filter without bypass — switching at 2 bar ± 10%

Visual-electrical indicator

1E - K1* Series for Filter with bypass set to 1,75 bar — switching at 1,2 bar ± 10%
E6 - K6* Series for Filter without bypass — switching at 2 bar ± 10%

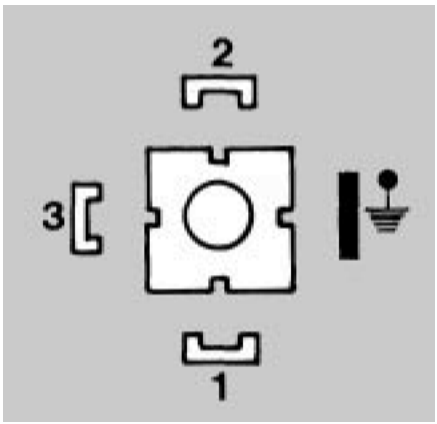
*For K visual-electrical indicator, specify the voltage (il. K61 = LED: 24 volt)

*{ 1 - 24 Volt
2 - 115 Volt
3 - 230 Volt

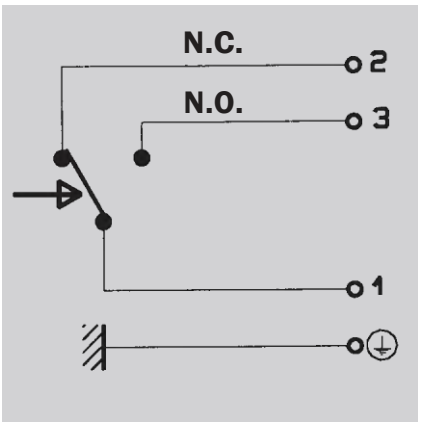
Pressure differential indicator option

	K - E - N Series	
Supply voltage (50/60 Hz)	Resistive load	Inductive load
(V)	(A)	(A)
Vca 125	5	2
Vca 250	5	2
Vcc 30	5	3
Vcc 125	0,5	0,03
Vcc 250	0,25	0,03

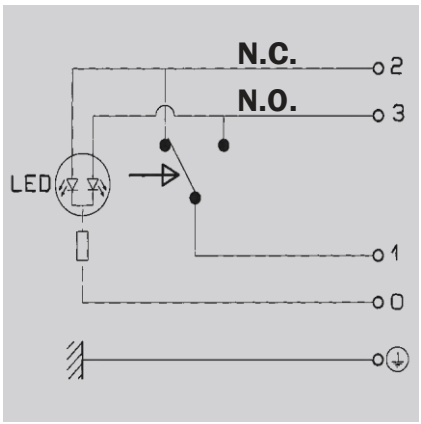
CONNECTOR DIN 43650



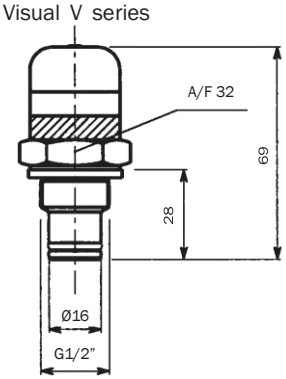
ELECTRICAL CONNECTION E - N SERIES



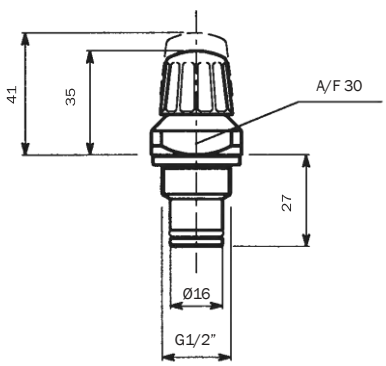
ELECTRICAL CONNECTION K SERIES



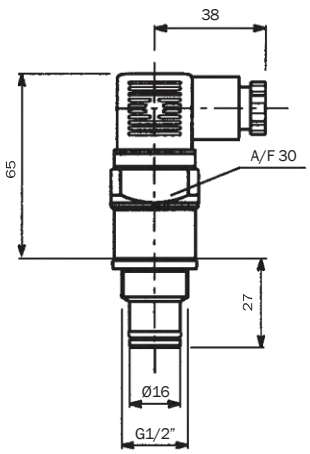
Visual V series



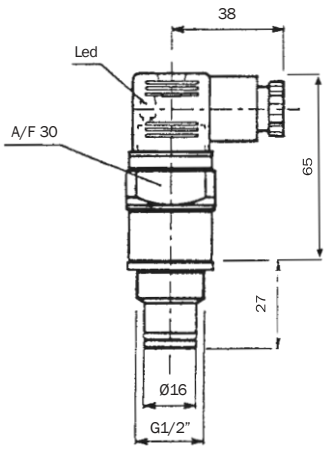
Visual Z series



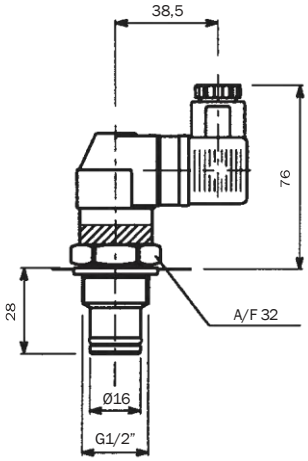
Electrical N series



Visual led - Electrical K series



Visual - Electrical E series



Fluid Compatibility

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)

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)
water - glycol (types HFC as per ISO 6743/4)
V Series
Viton compatible with synthetic fluids
(types HS-HFDR-HFDS-HFDU as per ISO 6743/4)

Filter elements
As per ISO 2943; suitable for mineral oils
(types HH-HL-HM-HR-HV-HG as per ISO 6743/4)
and synthetic fluids (A and M series only)
(types HS-HFDR-HFDS-HFDU as per ISO 6743/4)
For water-based emulsions (types HFAE-HFAS as per ISO 6743/4) and fluids other than those mentioned, please consult our Sales Network Organization.

International standards for contamination fluid control

A general (no direct) comparison between ISO 4406 and NAS 1638 is given in table below.

Contamination codes ISO 4406			Correspondent codes NAS 1638	Recommended filtration degree	Typical applications
4µm(c)	*6µm(c)*	*14µm(c)*		*B x* ^{3} *200*	
14	12	9	3	3	High precision and laboratory servo-systems
17	15	12	6	3-6	Robotic and servo-systems
18	16	13	7	10-12	Very sensitive - high reliability systems
20	18	15	9	12-15	Sensitive - reliable systems
21	19	16	10	15-25	General equipment of limited reliability
23	21	18	12	25-40	Low - pressure equipment not in continuous service

Selection & installation information

Filter elements types

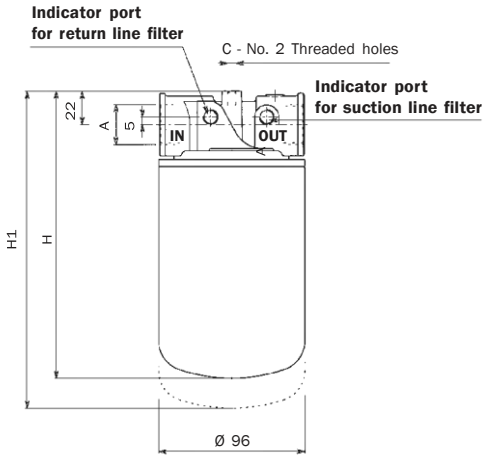
A Series
Absolute inorganic microfibre filtration media, available in 3, 6, 10 and 25 micron
Example - **A03, A06, A10** or **A25**

P Series
Nominal cellulose impregnated paper media, available in 10 and 25 micron.
Example - **P10** or **P25**

M Series
Metal mesh media, available in 25, 60, and 90 micron.
Example - **M25**, **M60** or **M90**.

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 30% of the filter condition indicator (0.4 bar) for line and return filter and 8 kPa for suction filter.



MPS 050-071

Lengths

Type	H	H1
050-051	180	200
070-071	248	268

MPS SERIES 050-051 SIZES

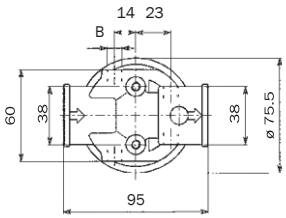
Filter assembly	Line Flow rate l/min *	Suction Flow rate l/min *	Port size BSP/NPT/SAE	Weight kg **
A03	40	9	SEE TABLE BELOW	1,0
A06	44	11		
A10	48	14		
A25	58	18		
P10	55	16		
M60-M90	-	24		

MPS SERIES 070-071 SIZES

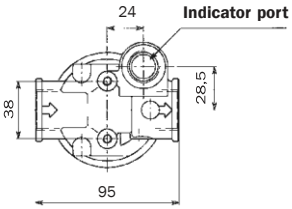
Filter assembly	Line Flow rate l/min *	Suction Flow rate l/min *	Port size BSP/NPT/SAE	Weight kg **
A03	45	11	SEE TABLE BELOW	1,3
A06	49	13		
A10	53	15		
A25	63	20		
P10	58	18		
M60-M90	-	26		

* Flow rates with 30 mm²/s fluid viscosity
** Weight including filter element

MPS 050-070 Series

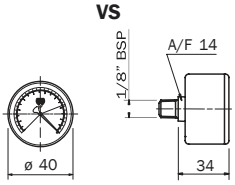


MPS 051-071 Series

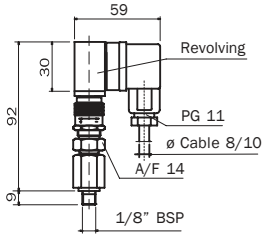


Indicator for suction filter MPS 050-070 (only for option G1-G5)

VS

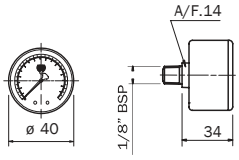


EO

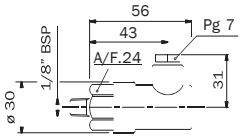


Indicator for return filter MPS 050-070 (only for option G1-G5)

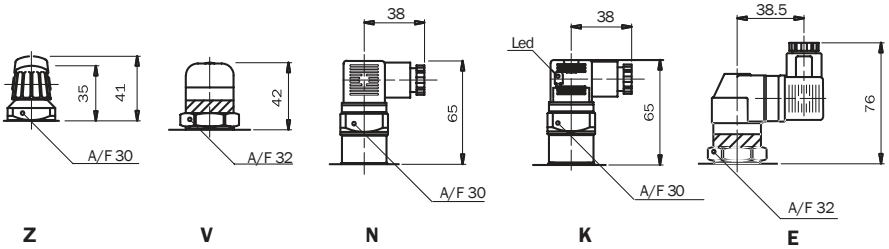
VR - VA



ER - EC



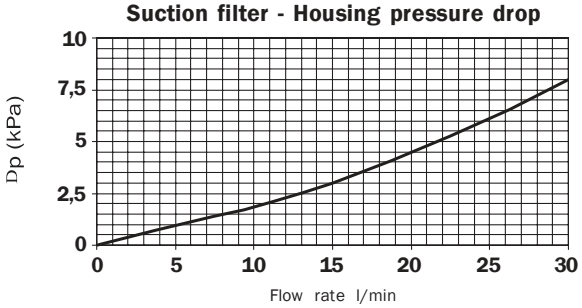
Indicator for line filter MPS 051-071



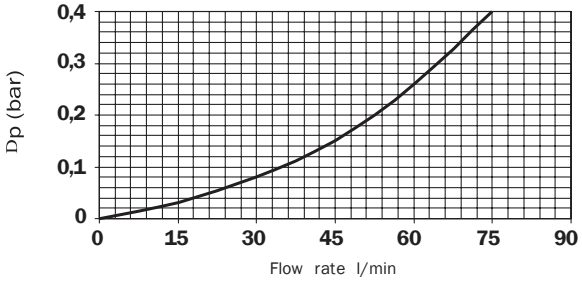
Thread connections

Type	A	B	C
G1	3/4" BSP	1/8" BSP	M6
G2	3/4" NPT	1/8" NPT	1/4" UNC
G3	SAE 12 - 1 1/16" - 12 UN	1/8" NPT	1/4" UNC
G4	SAE 8 - 3/4" - 16 UNF	1/8" NPT	1/4" UNC
G5	1" BSP	1/8" BSP	M6
G6	1" NPT	1/8" NPT	1/4" UNC

Suction filter - Housing pressure drop

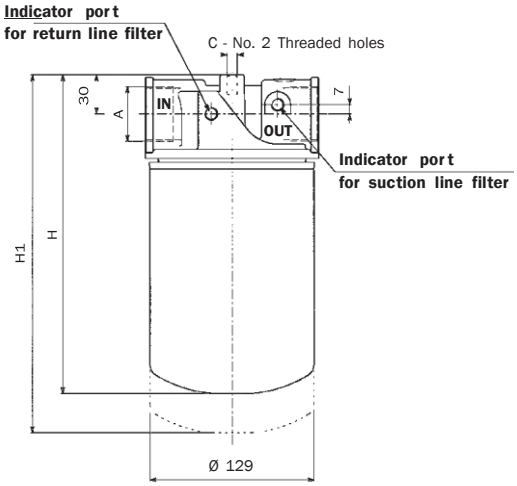


Return line filter - Housing pressure drop



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 30% of the filter condition indicator (0.4 bar) for line and return filter and 8 kPa for suction filter.



MPS 100-151

Lengths

Type	H	H1
100-101	241	266
150-151	286	311

MPS SERIES 100-101 SIZES

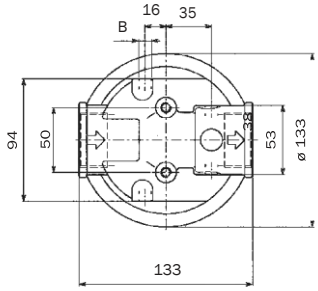
Filter assembly	Line Flow rate l/min *	Suction Flow rate l/min *	Port size BSP/NPT/SAE	Weight kg **
A03	75	16	1 1/4"	2,2
A06	85	19		
A10	110	25		
A25	140	40		
P10	130	35		
M60-M90	-	65		

MPS SERIES 150-151 SIZES

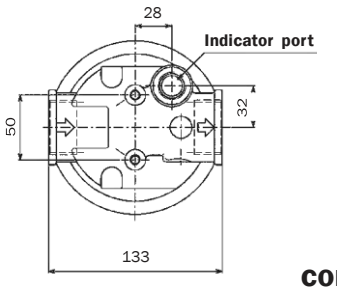
Filter assembly	Line Flow rate l/min *	Suction Flow rate l/min *	Port size BSP/NPT/SAE	Weight kg **
A03	85	18	1 1/4"	2,3
A06	100	22		
A10	115	30		
A25	160	45		
P10	150	40		
M60-M90	-	68		

* Flow rates with 30 mm²/s fluid viscosity
** Weight including filter element

MPS 100-150 Series



MPS 101-151 Series

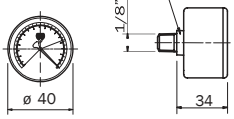


Thread connections

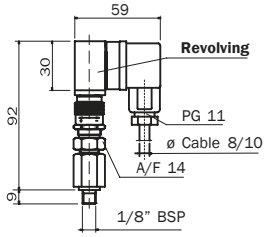
Type	A	B	C
G1	1 1/4" BSP	1/8" BSP	M8
G2	1 1/4" NPT	1/8" NPT	5/16" UNC
G3	SAE 20 - 1 5/8" - 12 UN	1/8" NPT	5/16" UNC

Indicator for suction filter MPS 100-150 (only for option G1)

VS

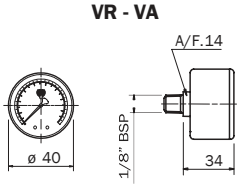


EO

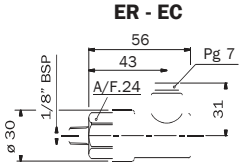


Indicator for return filter MPS 100-150 (only for option G1)

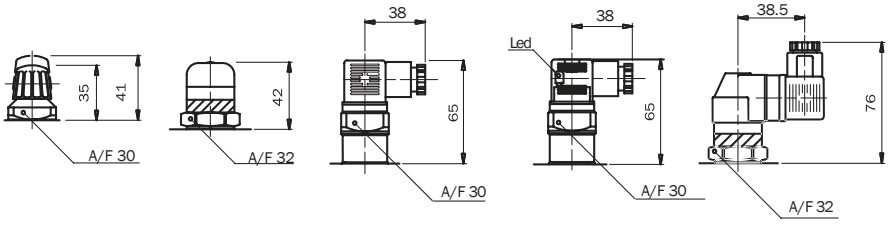
VR - VA



ER - EC

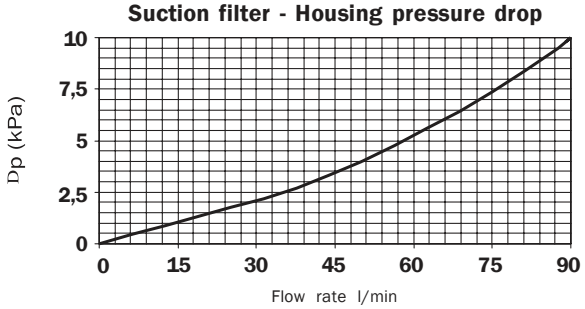


Indicator for line filter MPS 101-151

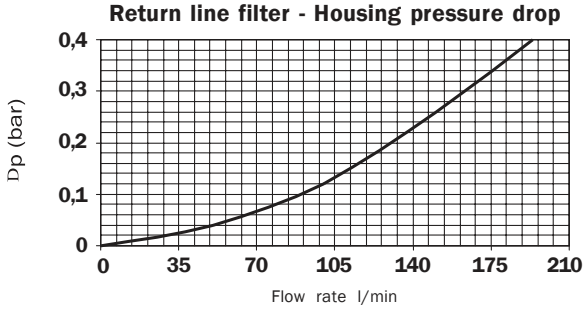


Z V N K E

Suction filter - Housing pressure drop



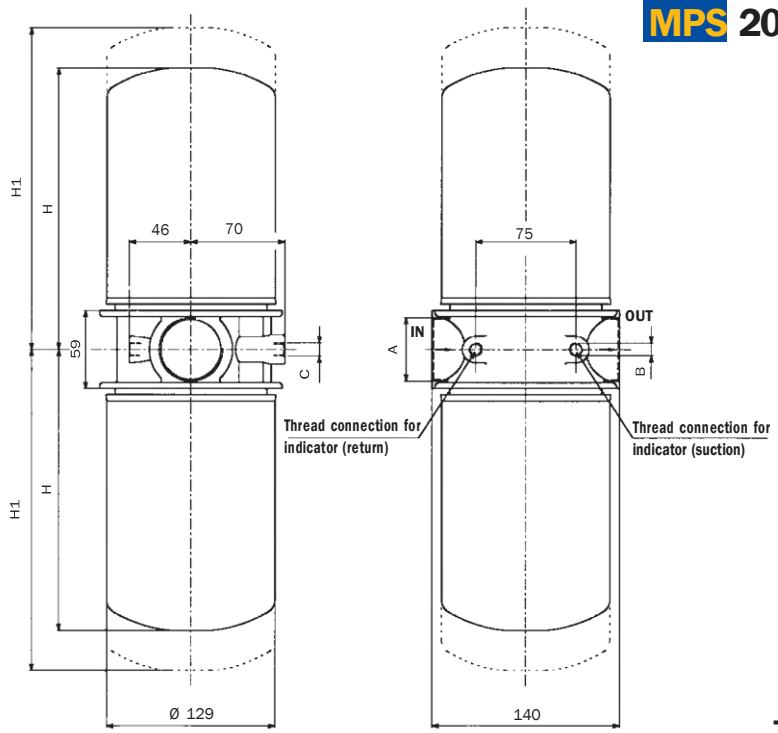
Return line filter - Housing pressure drop



Selection & installation information

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 30% of the filter condition indicator (0.4 bar) for line and return filter and 8 kPa for suction filter.



MPS 200-250

MPS SERIES 200 SIZES

Filter assembly	Line Flow rate l/min *	Suction Flow rate l/min *	Port size BSP/NPT/SAE	Weight kg **
A03	130	30	1 1/2"	4,0
A06	170	45		
A10	220	65		
A25	290	110		
P10	270	100		
M60-M90	-	120		

MPS SERIES 250 SIZES

Filter assembly	Line Flow rate l/min *	Suction Flow rate l/min *	Port size BSP/NPT/SAE	Weight kg **
A03	180	50	1 1/2"	4,2
A06	210	60		
A10	250	80		
A25	310	125		
P10	280	118		
M60-M90	-	130		

* Flow rates with 30 mm²/s fluid viscosity
** Weight including filter element

Lengths

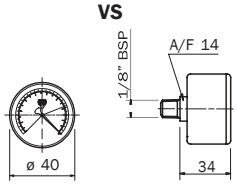
Type	H	H1
200	216	241
250	261	286

Thread connections

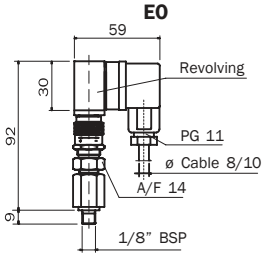
Type	A	B	C
G1	1 1/2" BSP	1/8" BSP	M10
G2	1 1/2" NPT	1/8" NPT	3/8" UNC
G3	SAE 24 - 1 7/8" - 12 UN	1/8" NPT	3/8" UNC

Indicator for suction filter (only for option G1)

VS

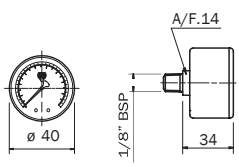


EO

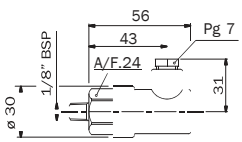


Indicator for return filter (only for option G1)

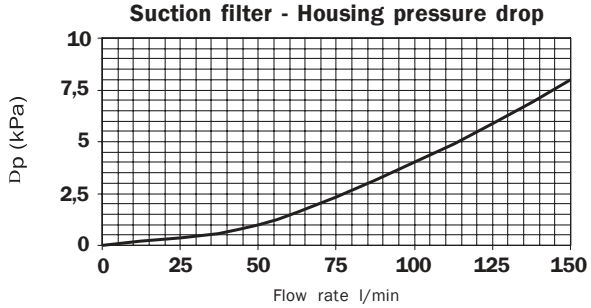
VR - VA



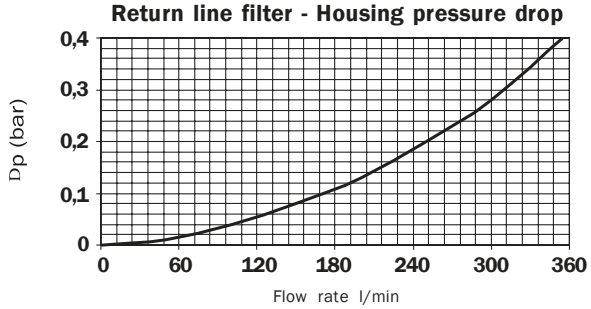
ER - EC



Suction filter - Housing pressure drop

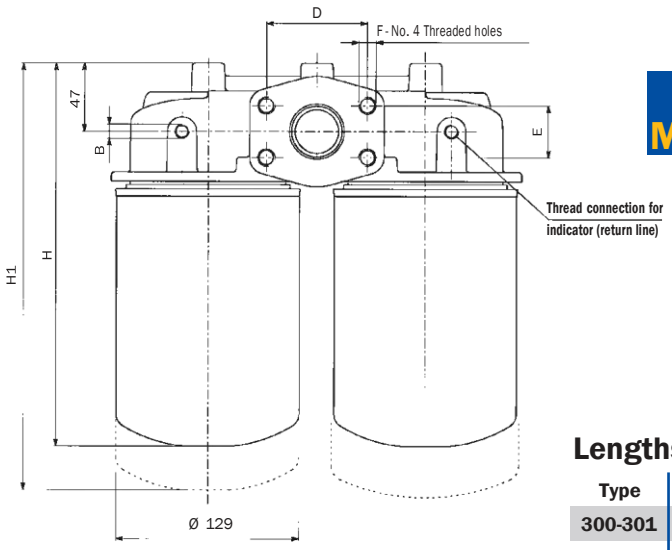


Return line filter - Housing pressure drop



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

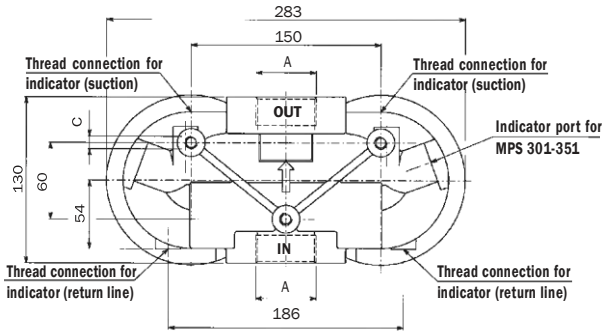
The following filter sizing recommendations are based using a mineral oil fluid at 30 mm²/s (cSt) with a maximum total filter assembly (housing and filter element) pressure drop of 30% of the filter condition indicator (0.4 bar) for line and return filter and 8 kPa for suction filter.



MPS 300-351

Lengths

Type	H	H1
300-301	265	290
350-351	310	335



MPS SERIES 300-301 SIZES

Filter assembly	Line Flow rate l/min *	Suction Flow rate l/min *	Port size BSP/NPT/SAE	Weight kg **
A03	130	30	1 1/2"	5,4
A06	170	45		
A10	220	65		
A25	290	110		
P10	270	100		
M60-M90	-	120		

MPS SERIES 350-351 SIZES

Filter assembly	Line Flow rate l/min *	Suction Flow rate l/min *	Port size BSP/NPT/SAE	Weight kg **
A03	180	50	1 1/2"	5,6
A06	210	60		
A10	250	80		
A25	310	125		
P10	280	118		
M60-M90	-	130		

* Flow rates with 30 mm²/s fluid viscosity
** Weight including filter element

Thread connections

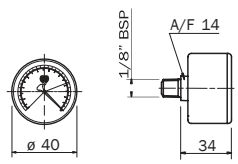
Type	A	B	C
G1	1 1/2" BSP	1/8" BSP	M10
G2	1 1/2" NPT	1/8" NPT	3/8" UNC
G3	SAE 24 - 1 7/8" - 12 UN	1/8" NPT	3/8" UNC

Flange connections

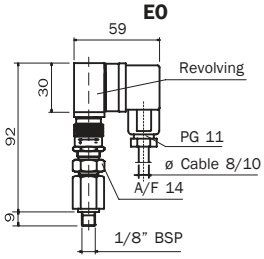
Type	A	B	C	D	E	F
F1	1 1/2" SAE 3000 PSI/M	1/8" BSP	M12	69,85	35,71	M12
F2	1 1/2" SAE 3000 PSI/UNC	1/8" NPT	1/2" UNC	69,85	35,71	1/2" UNC

Indicator for suction filter MPS 300-350 (only for option G1-G5-F1)

VS

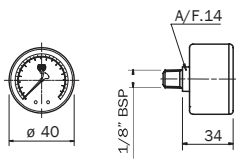


EO

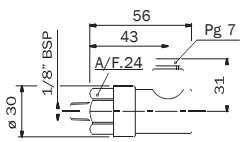


Indicator for return filter MPS 300-350 (only for option G1-G5-F1)

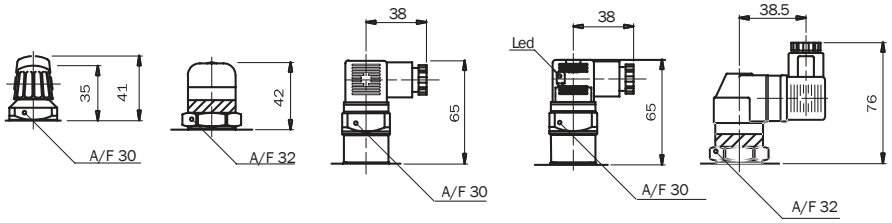
VR - VA



ER - EC

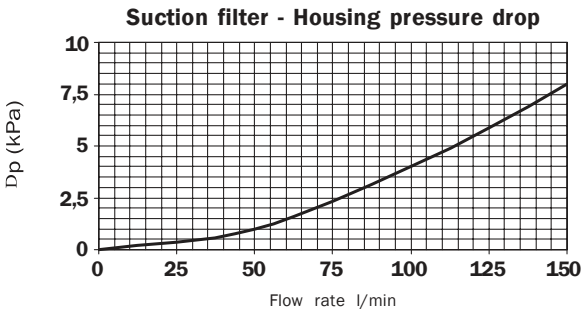


Indicator for line filter MPS 301-351

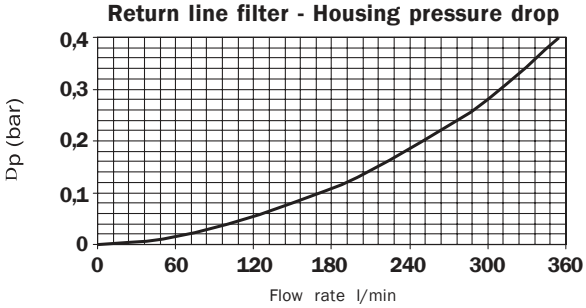


Z V N K E

Suction filter - Housing pressure drop



Return line filter - Housing pressure drop



Datasheet Reference:
HM-000190