Medium Pressure Filter   KF5

100 gpm
380 L/min
500 psi
35 bar

Features and Benefits

- Meets HF4 automotive standard
- Offered in pipe, SAE straight thread, flange and ISO 228 porting
- Available with NPTF inlet and outlet female test ports
- KFN5 non-bypass version with high collapse elements also available
- Various Dirt Alarm® options
- Allows consolidation of inventoried replacement elements by using K-size elements
- Also available with DirtCatcher® elements (KD & KKD)
- **G** Available with quality-protected GeoSeal® Elements (GKF5)

Model No. of filter in photograph is KF51KZ10SD5.

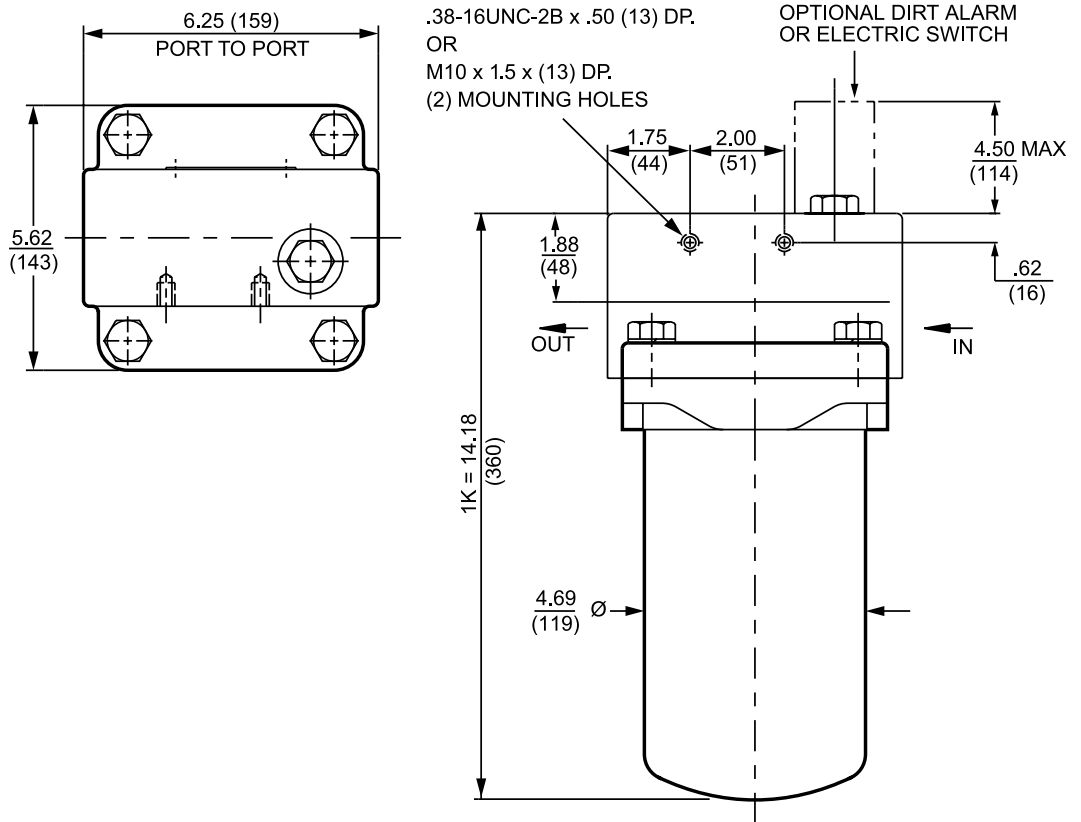## Filter Housing Specifications

Flow Rating:	Up to 100 gpm (380 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	500 psi (35 bar)
Min. Yield Pressure:	1500 psi (100 bar) , per NFPA T2.6.1
Rated Fatigue Pressure:	300 psi (35 bar), per NFPA T2.6.1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 40 psi (2.8 bar) Full Flow: 61 psi (4.2 bar)
Porting Head:	Grey Cast Iron
Element Case:	Steel
Weight of KF5-1K:	23.2 lbs. (10.5 kg)
Element Change Clearance:	2.0" (51 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E media (cellulose), Z-Media® and ASP® media (synthetic)
High Water Content	All Z-Media® (synthetic), 3, 5 and 10 µ ASP® media (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic), 10 µ ASP® media (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic), 3, 5 and 10 µ ASP® media (synthetic)
Phosphate Esters	All Z-Media® (synthetic) with H (EPR) seal designation and 3 and 10 µ E media (cellulose) with H (EPR) seal designation, 3, 5 and 10 µ ASP® media (synthetic)
Skydrol®	3, 5, 10 and 25 µ Z-Media® (synthetic) with H.5 seal designation (EPR seals & stainless steel wire mesh in element, and light oil coating on housing exterior), 3, 5 and 10 µ ASP® media (synthetic)

6.25 (159)
PORT TO PORT

5.62
(143)

.38-16UNC-2B x .50 (13) DP.
OR
M10 x 1.5 x (13) DP.
(2) MOUNTING HOLES

OPTIONAL DIRT ALARM
OR ELECTRIC SWITCH

1.75
(44)

2.00
(51)

4.50 MAX
(114)

1.88
(48)

.62
(16)

OUT

IN

1K = 14.18
(360)

4.69
(119) Ø

Metric dimensions in ( ).
Dimensions shown are inches (millimeters) for general information and overall envelope size only.
For complete dimensions please contact Schroeder Industries to request a certified print.

Element Performance Information & Dirt Holding Capacity

Element	Filtration Ratio Per ISO 4572/NFPA T3.10.8.8 Using automated particle counter (APC) calibrated per ISO 4402			Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171	
	$\beta_X \geq 75$	$\beta_X \geq 100$	$\beta_X \geq 200$	$\beta_X(c) \geq 200$	$\beta_X(c) \geq 1000$
KZ1	<1.0	<1.0	<1.0	<4.0	4.2
KZ3	<1.0	<1.0	<2.0	<4.0	4.8
KZ5	2.5	3.0	4.0	4.8	6.3
KZ10	7.4	8.2	10.0	8.0	10.0
KZ25	18.0	20.0	22.5	19.0	24.0
KZW1	N/A	N/A	N/A	<4.0	<4.0
KZW3	N/A	N/A	N/A	4.0	4.8
KZW5	N/A	N/A	N/A	5.1	6.4
KZW10	N/A	N/A	N/A	6.9	8.6
KZW25	N/A	N/A	N/A	15.4	18.5

Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)
KZ1	112	KZW1	61	KDZ1	89
KZ3/KAS3	115	KZW3	64	KDZ3	71
KZ5/KAS5	119	KZW5	63	KDZ5	100
KZ10/KAS10	108	KZW10	67	KDZ10	80
KZ25	93	KZW25	79	KDZ25	81

Element Collapse Rating: 150 psid (10 bar) for standard elements
Flow Direction: Outside In
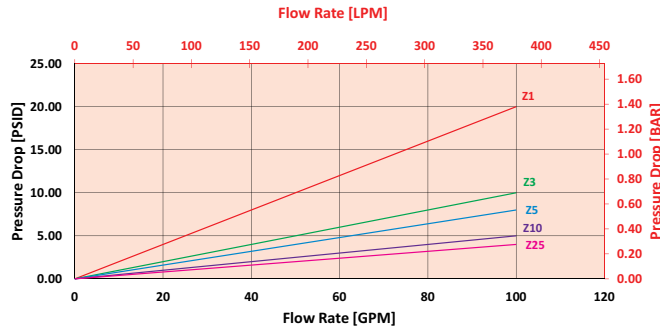**Element Nominal Dimensions:**   3.9" (99 mm) O.D. x 9.0" (230 mm) long

△P$_{housing}$

KF5 △P$_{housing}$ for fluids with sp gr (specific gravity) = 0.86:
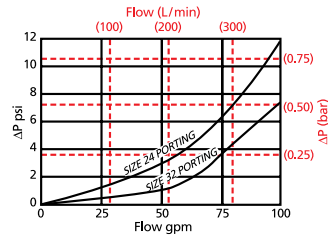
△P$_{element}$

KZ

Element Pressure Drop versus Flow Rate at 32 cSt (150 SUS)

$$\triangle P_{filter} = \triangle P_{housing} + (\triangle P_{element} *V_f)$$

Exercise:

Determine △P$_{filter}$ at 50 gpm (189.5 L/min) for KF51KZ10S24D5 using 200 SUS (42.6 cSt) fluid.

Use the housing pressure curve to determine △P$_{housing}$ at 50 gpm. In this case, △P$_{housing}$ is 3 psi (.21 bar) on the graph for the KF5 housing.

Use the element pressure curve to determine △P$_{element}$ at 50 gpm. In this case, △P$_{element}$ is 2 psi (.14 bar) according to the graph for the KZ10 element.

Because the viscosity in this sample is 200 SUS (42.6 cSt), we determine the **Viscosity Factor (V$_f$)** by dividing the **Operating Fluid Viscosity** with the **Standard Viscosity** of 150 SUS (32 cSt). To best determine your Operating Fluid Viscosity, please reference the chart in Appendix D.

Finally, the overall filter pressure differential, △P$_{filter}$, is calculated by adding △P$_{housing}$ with the true element pressure differential, (△P$_{element}$*V$_f$). The △P$_{element}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

△P$_{housing}$ = 3 psi [.21 bar] | △P$_{element}$ = 2 psi [.14 bar]

V$_f$ = 200 SUS (42.6 cSt) / 150 SUS (32 cSt) = 1.3

△P$_{filter}$ = 3 psi + (2 psi * 1.3) = 5.6 psi

OR

△P$_{filter}$ = .21 bar + (.14 bar * 1.3) = .40 bar

Note:
If your element is not graphed, use the following equation:
△P$_{element}$ = Flow Rate x △P$_f$. Plug this variable into the overall pressure drop equation.

Ele.	△P
K3	0.25
K10	0.09
K25	0.02
KAS3	0.10
KAS5	0.08
KAS10	0.05
KDZ1	0.24
KDZ3	0.12
KDZ5	0.10
KDZ10	0.06
KDZ25	0.04
KZW1	0.43
KZW3	0.32
KZW5	0.28
KZW10	0.23
KZW25	0.14

KF5   Medium Pressure Filter

How to Build a Valid Model Number for a Schroeder KF5:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9
KF5								
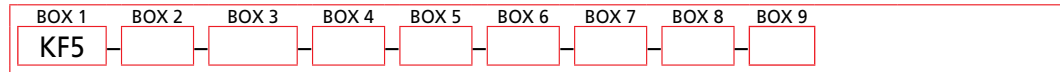
Example: *NOTE: One option per box*

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	
KF5	1K	Z	10			P32		D5	**= KF51KZ10P32D5**

BOX 1
Filter Series

KF5

KFN5
(Non-bypass: req. ZX/MXX hi-collapse elements)

WKF5
(Water)

WKFN5
(Water)

GKF5
(GeoSeal)

BOX 2
Number & Size of Elements

1K

BOX 3 — Media Type

Omit =	E media (Cellulose)
AS =	Anti-Static Pleated media
Z =	Excellement® Z-Media® (Synthetic)
ZW =	Aqua-Excellement® ZW media
ZX =	Excellement® Z-Media® (High Collapse Centertube)
W =	Water Removal media
M =	M media (Reusable Metal)
MXX =	M media (reusable metal mesh; high collapse centertube)
DZ =	DirtCatcher® Excellement® Z-Media®

BOX 4 — Micron Rating

1 =	1 μ (Z, ZW, ZX and DZ media)
3 =	3 μ (E, AS, Z, ZW, ZX and DZ media)
5 =	5 μ (AS, Z, ZW, ZX and DZ media)
10 =	10 μ (E, AS, Z, ZW, ZX, M and DZ media)
25 =	25 μ (E, Z, ZW, ZX, M, MXX and DZ media)
60 =	60 μ (M media)

BOX 5 — Seal Material

Omit =	Buna N
H =	EPR
V =	Viton®
H.5 =	Skydrol® Compatibility

BOX 6 — Magnetic Option

Omit =	None
M =	Magnet Inserts

BOX 7 — Porting Options

P24 =	1½" NPTF
P32 =	2" NPTF
S24 =	SAE-24
S32 =	SAE-32
F24 =	1½" SAE split 4-bolt flange Code 61
B24 =	ISO 228 G-1½"

BOX 8 — Test Port Options

Omit =	None
L =	Two ¼" NPTF inlet and outlet female test ports

BOX 9 — Dirt Alarm® Options

	Omit = None
Visual	D = Pointer D5 = Visual pop-up
Visual with Thermal Lockout	D8 = Visual w/ thermal lockout
Electrical	MS5 = Electrical w/ 12 in. 18 gauge 4-conductor cable MS5LC = Low current MS5 MS10 = Electrical w/ DIN connector (male end only) MS10LC = Low current MS10 MS11 = Electrical w/ 12 ft. 4-conductor wire MS12 = Electrical w/ 5 pin Brad Harrison connector (male end only) MS12LC = Low current MS12 MS16 = Electrical w/ weather-packed sealed connector MS16LC = Low current MS16 MS17LC = Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T = MS5 (see above) w/ thermal lockout MS5LCT = Low current MS5T MS10T = MS10 (see above) w/ thermal lockout MS10LCT = Low current MS10T MS12T = MS12 (see above) w/ thermal lockout MS12LCT = Low current MS12T MS16T = MS16 (see above) w/ thermal lockout MS16LCT = Low current MS16T MS17LCT = Low current MS17T
Electrical Visual	MS = Cam operated switch w/ ½" conduit female connection MS13 = Supplied w/ threaded connector & light MS14 = Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT = MS13 (see above), direct current, w/ thermal lockout MS13DCLCT = Low current MS13DCT MS14DCT = MS14 (see above), direct current, w/ thermal lockout MS14DCLCT = Low current MS14DCT

NOTES:

Box 2. Replacement element part numbers are a combination of Boxes 2, 3, 4 and 5.
Example: KZ10V
High collapse media only available with KFN5.

Box 5. For options H, V, and H.5, all aluminum parts are anodized.
H.5 seal designation includes the following: EPR seals, stainless steel wire mesh on elements, and light oil coating on housing exterior.
Viton® is a registered trademark of DuPont Dow Elastomers.
Skydrol® is a registered trademark of Solutia Inc.

Box 7. B porting supplied with metric mounting holes.