

Return Line Filter

KF3

IRF

TF1

KF3

KL3

LF1

MLF1

RLD

GRTB

MTA

MTB

ZT

AFT

KFT

RT

RTI

LRT

ART

BRT

TRT

BFT

QT

KTK

LTK

MRT



Features and Benefits

- Meets HF4 automotive standard
- Offered in pipe, SAE straight thread, flange and ISO 228 porting
- Various Dirt Alarm® options
- Available with No-Element indicator
- Available with NPTF inlet and outlet female test ports
- Available with magnet inserts
- Available with housing drain plug
- Takes the standard "K" element in K, KK or 27K lengths
- 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 (GKF3)

Si Part of Schroeder Industries' Energy Sustainability Initiative

100 gpm
380 L/min
300 psi
20 bar

Model No. of filter in photograph is KF31K10SD5.

Flow Rating:	Up to 100 gpm (380 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	300 psi (20 bar)
Min. Yield Pressure:	1000 psi (70 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	290 psi (20 bar), per NFPA T2.6.1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 30 psi (2 bar) Full Flow: 51 psi (4 bar)
Porting Head:	Die Cast Aluminum
Element Case:	Steel
Weight of KF3-1K:	10.5 lbs. (4.8 kg)
Weight of KF3-2K:	14.2 lbs. (6.4 kg)
Weight of KF3-3K:	18.5 lbs. (8.4 kg)
Element Change Clearance:	1.50" (40 mm) for all lengths

Filter Housing Specifications

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

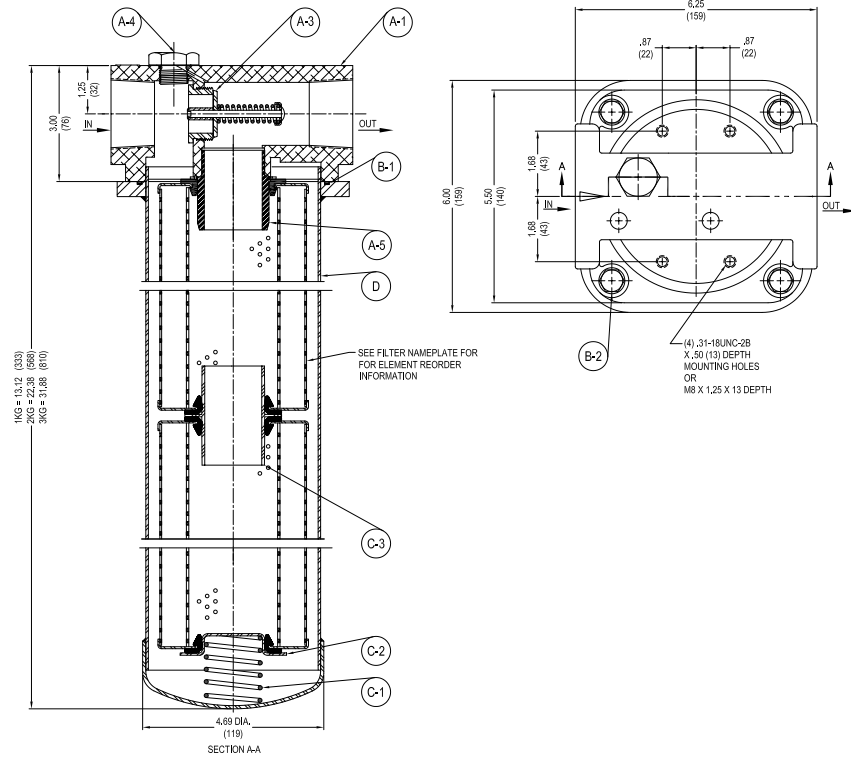
Fluid Compatibility

Accessories For Tank-Mounted Filters

PAF1

MAF1

MF2



Metric dimensions in ().

Element Performance Information & Dirt Holding Capacity

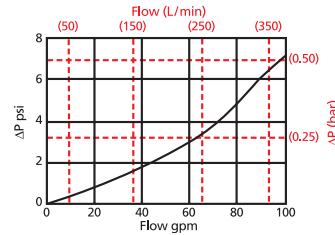
Element	Filtration Ratio Per ISO 4572/NFPA T3.10.8.8 Using automated particle counter (APC) calibrated per ISO 4402			Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171	
	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_x(c) \geq 200$	$\beta_x(c) \geq 1000$
KZ1/KKZ1/27KZ1	<1.0	<1.0	<1.0	<4.0	4.2
KZ3/KKZ3/27KZ3	<1.0	<1.0	<2.0	<4.0	4.8
KZ5/KKZ5/27KZ5	2.5	3.0	4.0	4.8	6.3
KZ10/KKZ10/27KZ10	7.4	8.2	10.0	8.0	10.0
KZ25/KKZ25/27KZ25	18.0	20.0	22.5	19.0	24.0
KZW1	N/A	N/A	N/A	<4.0	<4.0
KZW3/KKZW3	N/A	N/A	N/A	4.0	4.8
KZW5/KKZW5	N/A	N/A	N/A	5.1	6.4
KZW10/KKZW10	N/A	N/A	N/A	6.9	8.6
KZW25/KKZW25	N/A	N/A	N/A	15.4	18.5

Element	DHC (g)	Element	DHC (g)	Element	DHC (g)	Element	DHC (g)	Element	DHC (g)	Element	DHC (g)
KZ1	112	KKZ1	224	27KZ1	336	KDZ1	89	KKDZ1	188	KZW1	61
KZ3	115	KKZ3	230	27KZ3	345	KDZ3	71	KKDZ3	150	KZW3	64
KZ5	119	KKZ5	238	27KZ5	357	KDZ5	100	KKDZ5	210	KZW5	63
KZ10	108	KKZ10	216	27KZ10	324	KDZ10	80	KKDZ10	168	KZW10	57
KZ25	93	KKZ25	186	27KZ25	279	KDZ25	81	KKDZ25	171	KZW25	79
										KKZW3	128
										KKZW5	126
										KKZW10	114
										KKZW25	158

Element Collapse Rating: 150 psid (10 bar) for standard elements

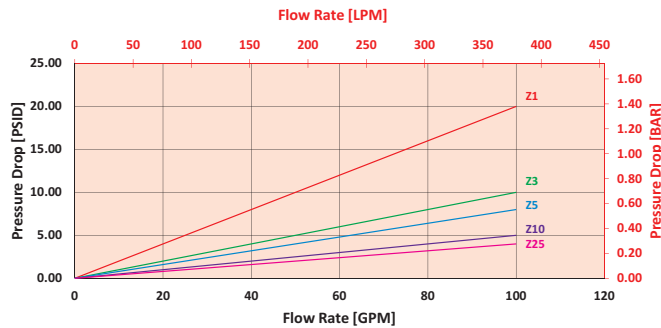
Flow Direction: Outside In

Element Nominal Dimensions: K: 3.9" (99 mm) O.D. x 9.0" (230 mm) long
 KK: 3.9" (99 mm) O.D. x 18.0" (460 mm) long
 27K: 3.9" (99 mm) O.D. x 27.0" (690 mm) long

$\Delta P_{\text{housing}}$ KF3 $\Delta P_{\text{housing}}$ for fluids with sp gr (specific gravity) = 0.86: $\Delta P_{\text{element}}$

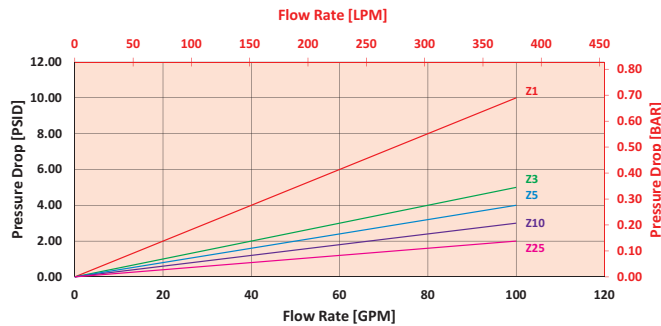
KZ

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



2KZ/KKZ

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



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

Exercise:Determine ΔP_{filter} at 70 gpm (265.3 L/min) for KF31KZ10SD5 using 160 SUS (34 cSt) fluid.Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 70 gpm. In this case, $\Delta P_{\text{housing}}$ is 4 psi (.27 bar) on the graph for the KF3 housing.Use the element pressure curve to determine $\Delta P_{\text{element}}$ at 70 gpm. In this case, $\Delta P_{\text{element}}$ is 3 psi (.21 bar) according to the graph for the KZ10 element.Because the viscosity in this sample is 160 SUS (34 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, ΔP_{filter} , is calculated by adding $\Delta P_{\text{housing}}$ with the true element pressure differential, $(\Delta P_{\text{element}} * V_f)$. The $\Delta P_{\text{element}}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.**Solution:**

$$\Delta P_{\text{housing}} = 4 \text{ psi } [.227 \text{ bar}] \mid \Delta P_{\text{element}} = 3 \text{ psi } [.21 \text{ bar}]$$

$$V_f = 160 \text{ SUS (34 cSt)} / 150 \text{ SUS (32 cSt)} = 1.1$$

$$\Delta P_{\text{filter}} = 4 \text{ psi} + (3 \text{ psi} * 1.1) = 7.7 \text{ psi}$$

OR

$$\Delta P_{\text{filter}} = .27 \text{ bar} + (.21 \text{ bar} * 1.1) = .50 \text{ bar}$$

Pressure Drop Information

Based on Flow Rate and Viscosity

Note:
If your element is not graphed, use the following equation:
 $\Delta P_{\text{element}} = \text{Flow Rate} \times \Delta P_{\text{f Plug}}$
this variable into the overall pressure drop equation.

Ele.	ΔP	Ele.	ΔP	Ele.	ΔP
K3	0.25	2K3/KK3	0.12	3KZ1/27KZ1	0.05
K10	0.09	2K10/KK10	0.05	3KZ3/27KZ3	0.03
K25	0.02	2K25/KK25	0.01	3KZ5/27KZ5	0.02
KAS3	0.10	2KAS3/KKAS3	0.05	3KZ10/27KZ10	0.02
KAS5	0.08	2KAS5/KKAS5	0.04	3KZ25/27KZ25	0.01
KAS10	0.05	2KAS10/KKAS10	0.03	K3K	0.08
KDZ1	0.24	2KDZ1	0.12	3K10	0.03
KDZ3	0.12	2KDZ3	0.06	3K25	0.01
KDZ5	0.10	2KDZ5	0.05	3KAS3/27KAS3	0.03
KDZ10	0.06	2KDZ10	0.03	3KAS5/27KAS5	0.02
KDZ25	0.04	2KDZ25	0.02	3KAS10/27KAS10	0.02
KZW1	0.43	2KZW1	-		
KZW3	0.32	2KZW3/KKZW3	0.16		
KZW5	0.28	2KZW5/KKZW5	0.14		
KZW10	0.23	2KZW10/KKZW10	0.12		
KZW25	0.14	2KZW25/KKZW25	0.07		

Filter
Model
Number
SelectionHighlighted
product eligible for
QuickDelivery

How to Build a Valid Model Number for a Schroeder KF3:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10
KF3									

Example: NOTE: Only box 10 may contain more than one option

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10
KF3	1K	Z	10			S		D5	

= KF31KZ10SD5

BOX 1	BOX 2	BOX 3	BOX 4
Filter Series	Number & Size of Elements	Media Type	Micron Rating
KF3	1K, KK,27K	Omit = E media (cellulose)	1 = 1 μ (Z, ZW and DZ media)
GKF3 (GeoSeal)	2K	AS = Anti-Static Pleat Media	3 = 3 μ (E, AS, Z, ZW and DZ media)
WKF3 (Water)	3K	Z = Excellement® Z-Media® (synthetic)	5 = 5 μ (AS, Z, ZW and DZ media)
	GeoSeal®	ZW = Aqua-Excellement® ZW media	10 = 10 μ (E, AS, Z, ZW, M and DZ media)
	1KG, KKG,27KG	W = Water Removal media	25 = 25 μ (E, Z, ZW, M and DZ media)
	2KG	M = M Media (reusable metal)	60 = 60 μ (M media)
	3KG	DZ = DirtCatcher® Excellement® Z-Media®	
		Water System Element Options	
		KM10 = K size 10 μ M media (reusable metal)	
		KM25 = K size 25 μ M media (reusable metal)	
		KM60 = K size 60 μ M media (reusable metal)	
		KM150 = K size 150 μ M media (reusable metal)	
		KM260 = K size 260 μ M media (reusable metal)	
BOX 5	BOX 6	BOX 7	BOX 10
Seal Material	Magnet Option	Porting	Additional Options
Omit = Buna N	Omit = None	P = 1½" NPTF	Omit = None
H = EPR	M = Magnet	S = SAE-24	L = Two ¼" NPTF inlet and outlet test ports
V = Viton®		F = 1½" SAE-4-bolt flange Code 61	N = No-Element indicator
H.5 = Skydrol®		B = ISO 228 G-1½"	G426 = ¾" drain on bottom of housing
Compatibility			G440 = ½" drain on bottom of housing
W = Buna N with anodized parts			

NOTES:

Box 2. Double and triple stacking of K-size elements can be replaced by single KK and 27K elements, respectively. Number of elements must equal 1 when using KK or 27K elements. ZW media not available in 27K.

Box 3. Replacement element part numbers are identical to contents of Boxes 2, 3, 4, and 5.

Box 5. For options H, W, 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. For option F, bolt thread depth .63" (16 mm). B porting option supplied with metric mounting holes.

Box 10. Option L not available with MS Dirt Alarm