High Pressure Filter PLD

Features and Benefits

- Durable carbon steel construction
- Filter housings are designed to withstand pressure surges as well as high static pressure loads
- Screw-in bowl allows the filter element to be easily removed for replacement or cleaning
- Standard model supplied with upstream and downstream pressure ports and drain plugs
- Standard Viton® seal on filter housing
- Filter contains an integrated equalization valve
- Pressure is equalized between filters by raising the change-over lever prior to switching it to the relevant filter side

100 gpm
380 L/min
3000 psi
205 bar

Model No. of filter in photograph is PLD10DVZ3VF24VM.

Applications


INDUSTRIAL


AUTOMOTIVE MANUFACTURING


MACHINE TOOL


MINING TECHNOLOGY


STEEL MAKING


POWER GENERATION

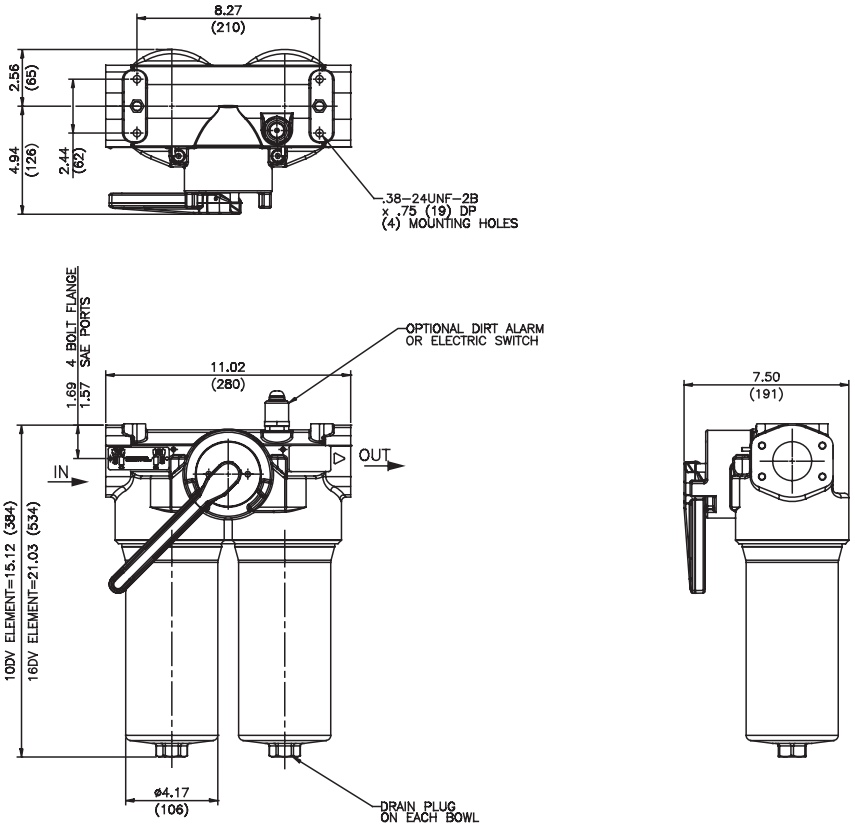

MARINE


PULP & PAPER

Filter Housing Specifications

Flow Rating:	Up to 100 gpm (380 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	3000 psi (207 bar)
Min. Yield Pressure:	10,600 psi (730 bar)
Rated Fatigue Pressure:	3000 psi (207 bar)
Temp. Range:	-22°F to 250°F (-30°C to 121°C)
Bypass Setting:	102 psi (7 bar)
Porting Head: Element Case:	Ductile Iron Steel
Weight of PLD-10DV: Weight of PLD-16DV:	97 lbs. (43.9 kg) 100 lbs. (45.3 kg)
Element Change Clearance:	**10DV:** 3.5" (89 mm) **16DV:** 3.5" (89 mm)

PLD High Pressure Filter



Metric dimensions in ( ).

Element Performance Information

Element	Filtration Ratio Per ISO 4572/NFPA T3.10.8.8 Using automated particle counter (APC) calibrated per ISO 4402			Filtration Ratio wrt ISO 16889 Using APC calibrated per ISO 11171	
	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
10/16DVZ1	<1.0	<1.0	<1.0	<4.0	4.2
10/16DVZ3	<1.0	<1.0	<2.0	<4.0	4.8
10/16DVZ5	2.5	3.0	4.0	4.8	6.3
10/16DVZ10	7.4	8.2	10.0	8.0	10.0
10/16DVZ25	18.0	20.0	22.5	19.0	24.0

Dirt Holding Capacity

Element	DHC (gm)	Element	DHC (gm)
10DVZ1	57	16DVZ1	110
10DVZ3	59	16DVZ3	114
10DVZ5	64	16DVZ5	124
10DVZ10	62	16DVZ10	112
10DVZ25	63	16DVZ25	102

Element Collapse Rating: 290 psid (20 bar)

Flow Direction: Outside In

Element Nominal Dimensions: 3.0" (75 mm) O.D. x 14.5" (370 mm) long

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All Z-Media® (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic)
Water Glycols	3, 6, 10 and 25 µ Z-Media® (synthetic)

Element Selection
Based on Flow Rate

Pressure	Element Series	Element Part No.	Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 102 psi (7 bar) bypass valve.
To 350 psi (24 bar)	Z-Media®	10DVZ1 & 16DVZ1	10DVZ1 | 16DVZ1 | Contact Factory
		10DVZ3 & 16DVZ3	10DVZ3 or 16DVZ3 | Contact Factory
		10DVZ5 & 16DVZ5	10DVZ5 | 16DVZ5 | Contact Factory
		10DVZ10 & 16DVZ10	10DVZ10 | 16DVZ10 | C.F.
		10DVZ25 & 16DVZ25	10DVZ25 | 16DVZ25

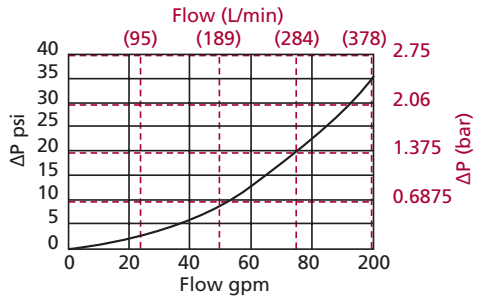
Flow	0		20		40		60		80		100
gpm											
(L/min)	0	50		100		150		250			380

Shown above are the elements most commonly used in this housing.

Pressure Drop Information
Based on Flow Rate and Viscosity

$\Delta P_{housing}$

PLD $\Delta P_{housing}$ for fluids with sp gr = 0.86:



$\Delta P_{element}$

$\Delta P_{element}$= flow x element ΔP factor x viscosity factor

El. ΔP factors @ 150 SUS (32 cSt):

10DVZ1	.35	**16DVZ1**	.23
10DVZ3	.22	**16DVZ3**	.18
10DVZ5	.13	**16DVZ5**	.10
10DVZ10	.11	**16DVZ10**	.09
10DVZ125	.06	**16DVZ25**	.05

If working in units of bars & L/min, divide above factor by 54.9.

Viscosity factor: Divide viscosity by 150 SUS (32 cSt).

sp gr = specific gravity

Sizing of elements should be based on element flow information provided in the Element Selection chart above.

Notes

$\Delta P_{filter} = \Delta P_{housing} + \Delta P_{element}$

Exercise: PLD16DVZ3F24VM

Determine ΔP at 75 gpm (284 L/min) for 16DVZ3 using 200 SUS (44 cSt) fluid.

Solution:

$\Delta P_{housing}$ = 20 psi [1.38 bar]

$\Delta P_{element}$ = 75 x .18 x (200÷150) = 18 psi
or
= [284 x (.18÷54.9) x (44÷32) = 1.24 bar]

ΔP_{total} = 20 + 18 = 38 psi
or
= [1.38 + 1.24 = 2.62 bar]

PLD High Pressure Filter

Filter Model Number Selection

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

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6
PLD					

Example: *NOTE: One option per box*

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	
PLD	10	DVZ1	V	F24	VM	**= PLD10DVZ1VF24VM**

BOX 1

Filter Series
PLD

BOX 2

Length of Elements (in)
10
16

BOX 3

Element Size and Media
DVZ1 = DV size 1 µ synthetic media
DVZ3 = DV size 3 µ synthetic media
DVZ5 = DV size 5 µ synthetic media
DVZ10 = DV size 10 µ synthetic media
DVZ25 = DV size 25 µ synthetic media

BOX 4

Seal Material
Omit = Buna N
V = Viton®

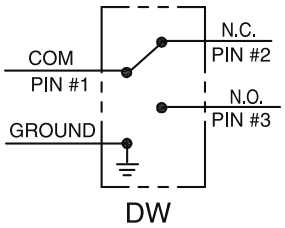
BOX 5

Porting
F24 = 1½" SAE 4-bolt flange Code 61
S24 = SAE-24 (1½")

BOX 6

Dirt Alarm® Options	
	Omit = None
Visual	VM = Visual pop-up w/manual rest
Electrical	DW = AC/DC 3-wire (NO or NC)

VM = Manual Reset



DW = AC/DC 3-wire
(NO or NC)

NOTES:

Box 2. Replacement element part numbers are a combination of Boxes 2, 3 and 4. Example: 16DVZ10

Box 4. Filter housings are supplied with standard Viton seals. Seal designation in Box 4 applies to element only. Viton is a registered trademark of DuPont Dow Elastomers.