



## New: UR310 Series Athalon™ Return Line Filters

Athalon™ maximum-life filters deliver the highest level of sustained fluid system protection, across all applications, regardless of severity. Featuring an industry leading  $\text{Beta}_{X(C)}=2000^*$  filter efficiency; the highest rated filter performance available today.

(\* per ISO 16889)

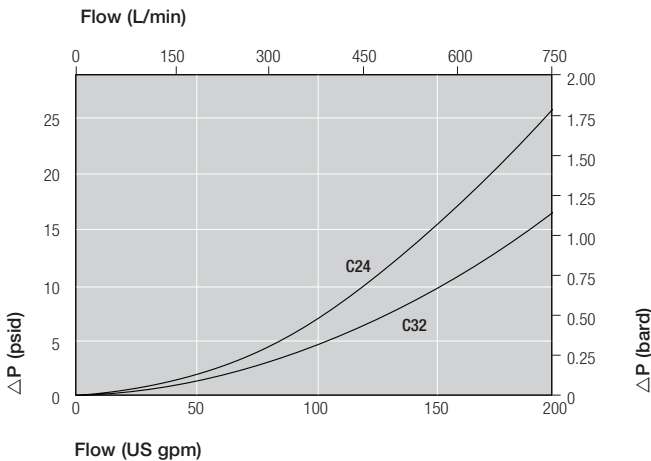
### Notes and Specifications Filter Housing

- Flows to 760 L/min (200 US gpm)
- Pressures to 41 Bar (600 psi)
- Port Size 1½" 2" and 2½"
- **Rated Fatigue Pressure:**  
0 - 41 bar (600 psi) per NFPA T2.06.01R2-2001 CAT C/90/(1 million cycles), verified by testing at 0-48 bar (687 psi) for 1 million cycles. Contact Pall for applications with higher pressures at lower cycles
- **Filter Element Burst Pressure:**  
10 bard (150 psid)
- **Fluid Compatibility:**  
Compatible with all petroleum oils and most water glycols, water-oil emulsions, and synthetic hydraulic and lubrication fluids
- **Temperature Range:**  
Fluorocarbon Seals:  
-29 °C to 120 °C (-20 °F to 248 °F)  
60 °C (140 °F) maximum in HWCF or water glycol fluids
- **Bypass Valve Setting:**  
4.5 bard (65 psid) or  
1.7 bard (25 psid)
- **Indicator Pressure Setting:**  
3.5 Bard (50 psid) or  
1.1 bard (16 psid)
- **Materials of Construction:**  
Head and Cover: Ductile Cast Iron  
Tube: Carbon steel
- **Filter Element :**  
Inorganic fibers impregnated and bonded with epoxy resins.  
Polymer endcaps. Anti-static media design

### Pressure Drop Information

**Housing pressure drop using fluid with 0.9 S.G.**

Housing pressure drop is directly proportional to specific gravity.



- Keeps fluids the cleanest, longest, for the greatest value
- Provides consistent, reliable, protection of system components over the full service life of the filter element
- Rapidly achieves and sustains required fluid system cleanliness
- Delivers maximum filter capacity in the smallest footprint
- Prevents electrostatic discharge from damaging your filter and degrading your fluid

### Features

- Patented Ultipleat (laid-over pleat) filter medium pack
- Pall Stress-Resistant Technology (SRT) Media
- Coreless filter element configuration
- Low clean differential pressure for low energy operation



UR310 Series filter housing

### Element Pressure Drop

310 Series Filter Elements – bard/1000 L/min (psid/US gpm)

Length Code	AZ	AP	AN	AS	AT
08	5.52 (0.302)	2.30 (0.126)	1.82 (0.100)	1.32 (0.072)	0.82 (0.045)
13	3.31 (0.182)	1.38 (0.076)	1.09 (0.060)	0.79 (0.043)	0.49 (0.027)
20	2.18 (0.120)	0.91 (0.050)	0.72 (0.040)	0.52 (0.029)	0.33 (0.018)
40	1.10 (0.060)	0.46 (0.025)	0.36 (0.020)	0.26 (0.014)	0.16 (0.009)

Multiply actual flow rate times factor in table below to determine pressure drop with fluid at 32 cSt (150 SUS), 0.9 S.G. Correct for other fluids by multiplying new viscosity in cSt/32 (SUS/150) x new S.G./0.9. Note: factors are per 1000 L/min and per 1 US gpm

### Sample ΔP calculation

UR310 Series 13" length housing with C24 ( 1½" BSPP) ports using AN grade media. Operating conditions 300 L/min flow rate using a hydraulic fluid of 50 cSt and specific gravity (s.g.) 1.2.

#### Total Filter ΔP

$$\begin{aligned}
 &= \Delta P \text{ housing} + \Delta P \text{ element} \\
 &= (0.3 \times 1.2/0.9) \text{ bard (housing)} \\
 &+ ((300 \times 1.09/1000) \times 50/32 \times 1.2/0.9) \text{ bard (element)} \\
 &= 0.4 \text{ (housing)} + 0.68 \text{ bard (element)} \\
 &= \mathbf{1.08 \text{ bard (15.68 psid)}}
 \end{aligned}$$

## Ordering Information

For new installations, select one complete part number from each section below

### Section 1 Housing P/N: UR310

**Note:** Pall Athalon filter housings are supplied without filter elements or warning devices fitted. Never operate the filter unless a filter element is fitted and all warning device ports are sealed.

**Note:** Z indicates fluorocarbon seals are standard. Other options are available; contact Pall. Housing P/N designates indicator port fitted with a plastic shipping plug.

Table A	Table B
Port & Length Options Tables 1, 2 and 3	Bypass & Orientation Options Tables 4
A2408Z	A, AH, G and GH
A2413Z	A, AH, G and GH
A2420Z	A and G
A3213Z	A, AH, G and GH
A3220Z	A and G
A3240Z	A and G
C2408Z	A, AH, G and GH
C2413Z	A, AH, G and GH
C2420Z	A and G
C3213Z	A, AH, G and GH
C3220Z	A and G
C3240Z	A and G
D3213Z	A, AH, G and GH
D3220Z	A and G
D3240Z	A and G
D4013Z	AH and GH
D4020Z	A and G
D4040Z	A and G
F3213Z	A, AH, G and GH
F3220Z	A and G
F3240Z	A and G
F4013Z	AH and GH
F4020Z	A and G
F4040Z	A and G

**Table 1: Housing Port Options**

Code	Port Style
A	SAE J1926 straight thread
C	BSP ISO 228 threads
D	Flange J518C Code 61
F	ISO 6162 split flange

**Table 2: Port Size**

Code	Port Style
24	1 1/2" nominal
32	2" nominal
40	2 1/2" nominal

**Table 3: Housing Length and Seal Options**

Code	Length and Seal Material
08Z	8" nominal length, fluorocarbon seals
13Z	13" nominal length, fluorocarbon seals
20Z	20" nominal length, fluorocarbon seals
40Z	40" nominal length, fluorocarbon seals

**Table 4: Bypass Valve and Service Options**

Code	Bypass Valve and Service Type
A	1.7 bard (25 psid) bypass valve, cover service
AH	1.7 bard (25 psid) bypass valve, head service
G	4.5 bard (65 psid) bypass valve, cover service
GH	4.5 bard (65 psid) bypass valve, head service

### Seal Kit P/N: SR310SKZ

\*Other seal material options are available; Contact Pall.

### Section 2 Element P/N: UE 310

**Note:** Z indicates fluorocarbon seals are standard. Other options are available; contact Pall.

**Table 5: Filter Element Options**

Code	$\beta_{x(c)} \geq 2000$ based on ISO 16889	CST Rating*
AZ	3	07/04/01
AP	5	11/08/03
AN	7	13/09/04
AS	12	15/11/06
AT	25	16/14/08

\* CST: Cyclic Stabilization Test to determine filter rating under stress conditions, based on SAE ARP4205

### Section 3 (At least one Differential Pressure Indicator or 'B' type blanking plug must be ordered)

#### Differential Pressure Indicator P/N:

RC  Z  Z

**Note:** If no differential pressure indicator is selected, 'B' type blanking plug (P/N HC9000A104Z) must be ordered separately and fitted to replace the plastic shipping plug.

**Note:** Z indicates fluorocarbon seals are standard. Other options are available; contact Pall.

**Table 6: Indicator Options**

Code	Brass Option indicator
A218M	Electrical switch (SPDT) with Hirschmann connector
A218R	Electrical switch (SPDT) with Hirschmann connector with Red and Green LED indicators
A219D	Visual indicator

Other options are available; contact Pall.

**Table 7: Indicator Pressure Setting Option**

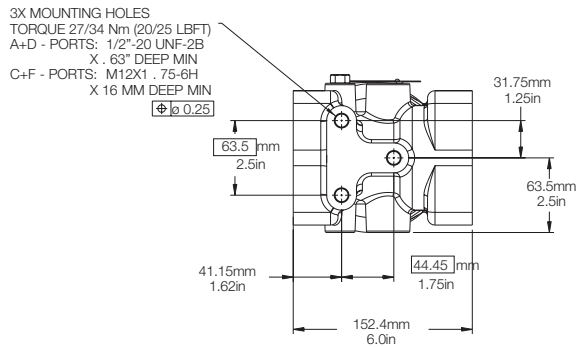
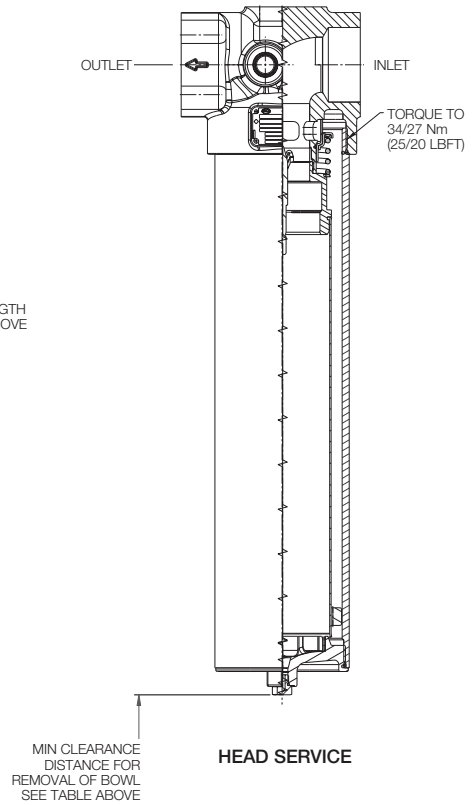
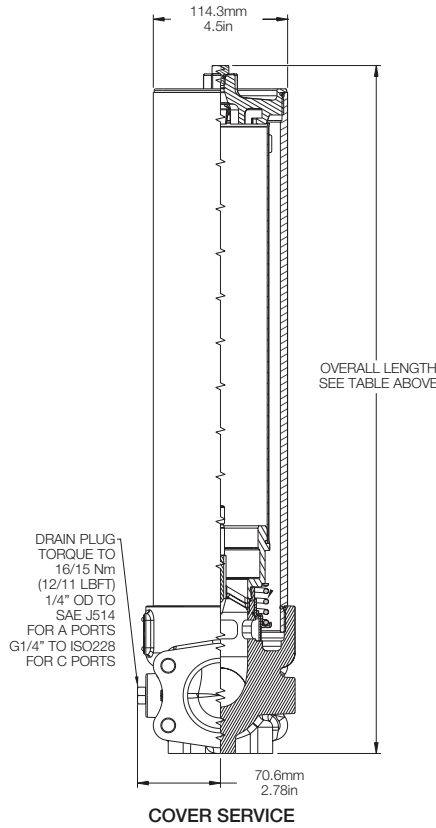
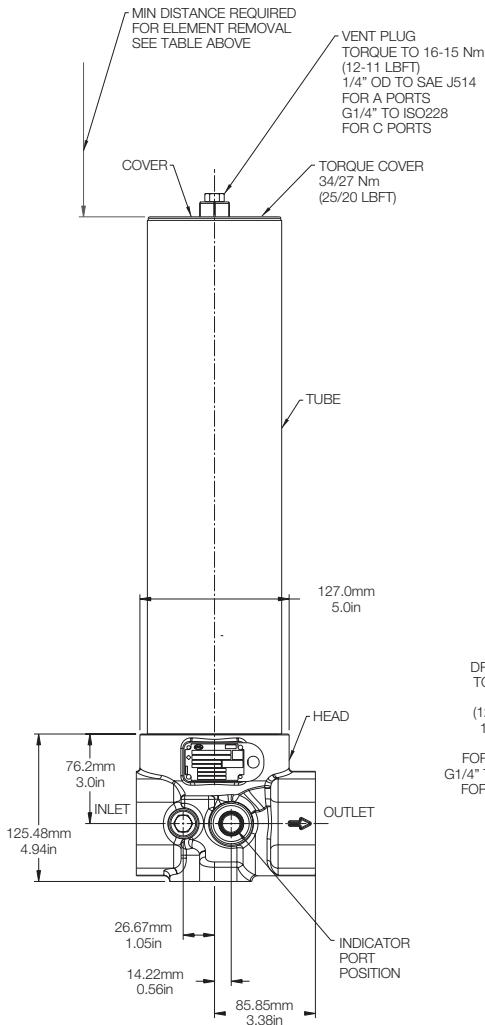
Code	Valve
084	For 'A' Valve Option - Housings (1.1 bard - 16 psid)
091	For 'G' Valve Option - Housings (3.5 bard - 50 psid)

Other setting options are available; contact Pall.

# Dimensional Drawings

Dimensions in mm (inches)

Length Code	Overall length mm (in)	Cover Service Element Removal Clearance mm (in)	Head Service Element Removal Clearance mm (in)	Empty Weight kg (lb)
8	452.1 (17.80)	248 (9.8)	290 (11.4)	14 (30.9)
13	586.7 (23.10)	383 (15.1)	437 (17.2)	16.5 (36.4)
20	756.9 (29.80)	553 (21.8)	N/A	19.7 (43.4)
40	1264.9 (49.80)	1061 (41.8)	N/A	29.2 (64.2)



The equipment has been assessed in accordance with the guidelines laid down in The European Pressure Directive 97/23/EC and has been classified within Sound Engineering Practice S.E.P. Suitable for use with Group 2 fluids only. Consult Sales for other fluid gas group suitability.



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