

## UR209 Series Filters

### Athalon® Return Line Filters

#### Port Size 1"

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)

- Flows to 120 L/min (32 US gpm)
- Pressures to 41 bar (600 psi)
- Port size 1"

### Notes and Specifications

#### Filter Housing

- **Maximum Allowable Working Pressure:**  
41 bar (600 psi)
- **Rated Fatigue Pressure:**  
41 bar (600 psi)  
10<sup>6</sup> cycles per NFPA T2.06.01R2-2001
- **Typical Burst Pressure:**  
130 bar (2650 psi)
- **Fluid Compatibility:**  
Compatible with petroleum oils, water glycols, water-oil emulsions, and most synthetic hydraulic and lubrication fluids
- **Temperature Range:**  
Fluorocarbon Seals:  
-29 °C to 120 °C (-20 °F to 250 °F)  
60 °C (140 °F) maximum in HWCF or water glycol fluids
- **Materials of Construction:**  
Aluminium alloy head and bowl

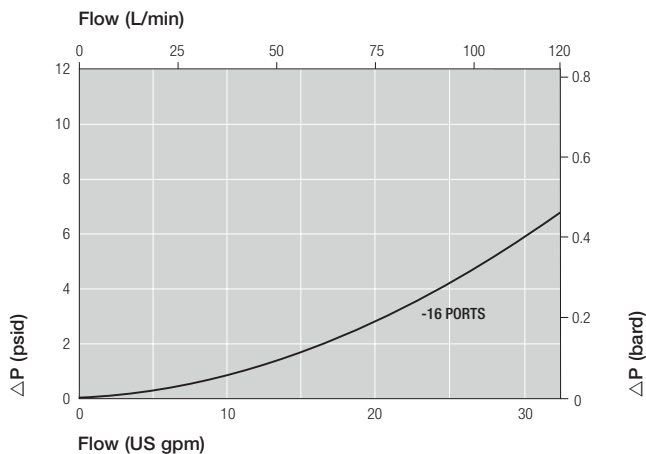
#### Filter Element

- **Filter Element Burst Pressure:**  
10 bard (150 psid)
- **Athalon Element Construction:**  
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.



UR209 Series  
Filter Housing

#### Element Pressure Drop

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.

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

Length Code	AZ	AP	AN	AS	AT
03	34.75 (1.907)	13.92 (0.764)	10.62 (0.583)	9.00 (0.494)	7.67 (0.421)
07	15.69 (0.861)	6.29 (0.345)	4.79 (0.263)	4.06 (0.223)	3.46 (0.190)

#### Sample ΔP calculation

UR209 Series 3" length housing with C16 (1" BSP) threaded ports using AN grade media. Operating conditions 20 L/min (5.28 US gpm) flow rate using a hydraulic fluid of 50 cSt and specific gravity (s.g.) 1.2.

##### Total Filter ΔP

$$\begin{aligned}
 &= \Delta P_{\text{housing}} + \Delta P_{\text{element}} \\
 &= (0.02 \times 1.2/0.9) \text{ bard (housing)} \\
 &+ ((20 \times 10.62/1000) \times 50/32 \times 1.2/0.9) \text{ bard (element)} \\
 &= 0.03 \text{ bard (housing)} + 0.44 \text{ bard (element)} \\
 &= \mathbf{0.47 \text{ bard (6.8 psid)}}
 \end{aligned}$$

## Ordering Information

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

### Section 1 Housing

P/N: UR209H



Table A

Table 4

Table 5

**Note:** Pall Athalon filter housings are supplied without filter elements or warning devices fitted. Never operate the filter housing 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**

**Port & Length Options**

Tables 1, 2 and 3

A1603Z

A1607Z

C1603Z

C1607Z

**Table 1: Housing Port Options**

Code	Port Style	Max. Operating Pressure
A	SAE J1926 straight thread	41 bar (600 psi)
C	BSP ISO 228 threads	41 bar (600 psi)

**Table 2: Port Size**

Code	Port Style
16	1" nominal

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

Code	Length and Seal Material
03Z	3" nominal length, fluorocarbon seals
07Z	7" nominal length, fluorocarbon seals

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

Code	Bypass Valve and Service Type
A1	1.7 bard (25 psid) bypass valve, head service
G1	4.5 bard (65 psid) bypass valve, head service

**Table 5: Other Options**

Code	Description
Omit	Aluminium alloy head and bowl
YS45	Anodized aluminium alloy finish for use with water glycols and HWCF

### Seal Kit P/N: SR210SKZ

Other seal material options are available; contact Pall.

### Section 2 Element P/N: UE 209



Table 6

Table 3

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

**Table 6: Filter Element Options**

Code	$\beta_{x(c)} \geq 1000$ 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 Differential Pressure Indicator

P/N: RC



Z



Z



Table 7

Table 8

Table 9

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

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

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

**Table 7: 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

**Table 8: Indicator Pressure Setting Option**

Code	Stainless Steel Option Indicator
778N	Visual filter with thermal lockout
861C*	Electrical switch (SPDT) with Hirschmann connector
771B	Electrical switch (SPDT) with 3-pin

Other options available; contact Pall.

\*Requires YM suffix after SS code from Table 8

**Table 9: Differential Pressure Indicator Material**

Code	Description
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.

**Table 9: Differential Pressure Indicator Material**

Code	Pressure Setting
Omit	If Brass Indicator is selected in Table 7
SS	If Stainless Steel Indicator is selected in Table 7 (recommended for high pressure applications with pressure > 200 bar (3000 psi))

Other setting options are available; contact Pall.

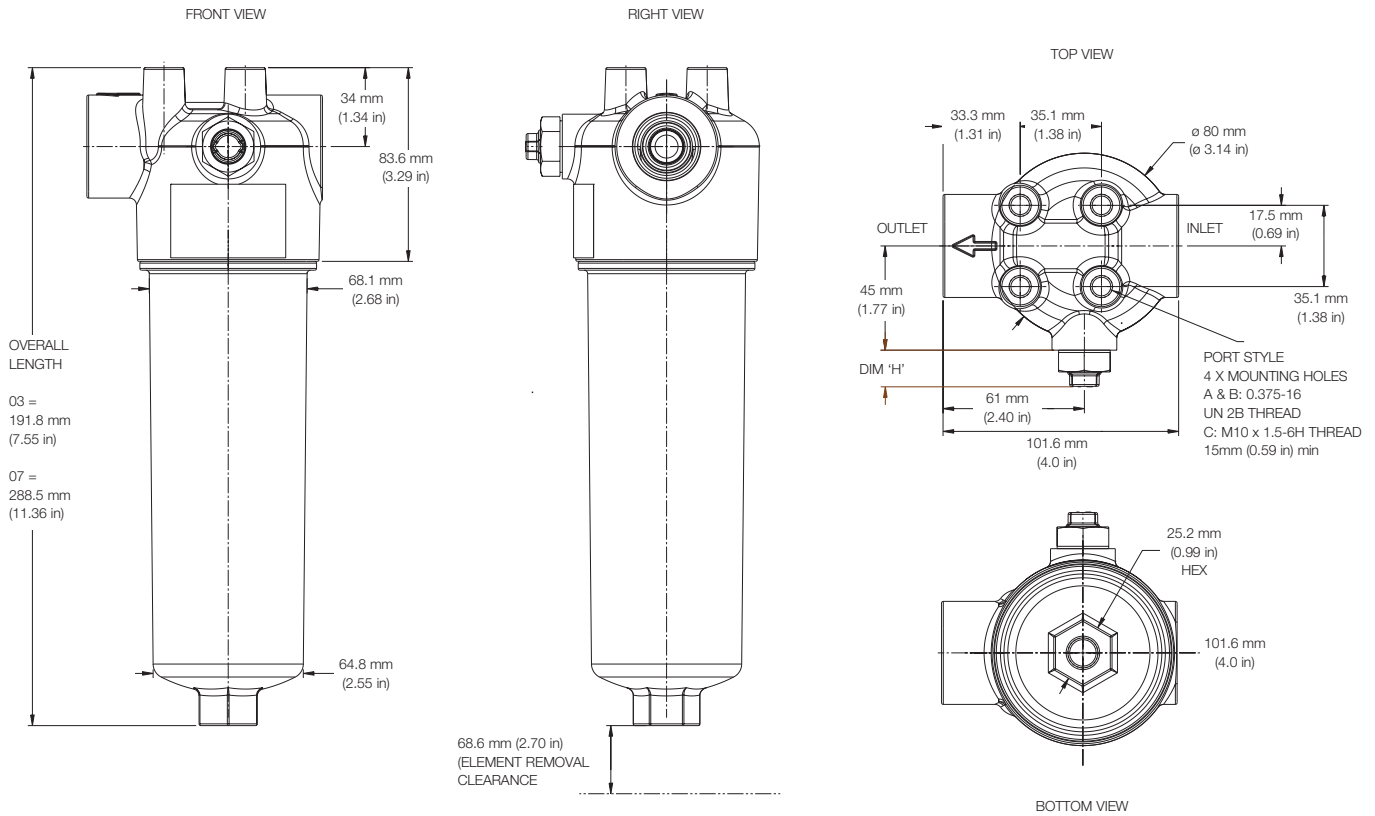
# Dimensional Drawings

Dimensions in mm (inches)

## Specifications

Length Code	Overall Length mm (in)	Element Removal Clearance mm (in)
03	192 (7.55)	69 (2.7)
07	283 (11.16)	69 (2.7)

### UR209 Housing



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 1 and 2 fluids only. Consult Sales for other fluid gas group suitability.



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