



Pall Corporation

# UR209

## UR209 Series Filters ULTIPLEAT® SRT RETURN LINE FILTERS Port Size ¾" and 1"



# UR209

## RETURN LINE FILTERS

## UR209 Series Filters

# Technical Information

### Features

- Patented Ultipleat (laid-over pleat) filter medium pack
- Coreless, cageless element configuration
- Pall Stress-Resistant Technology (SRT) Media
- In-to-out filter element flow path
- Flows to 120 L/min (32 US gpm)
- Pressures to 41 bard (600 psid)
- Port size ¾" and 1"

### Notes and Specifications

#### Filter Housing

- **Maximum Working Pressure:**  
41 bard (600 psid)
- **Rated Fatigue Pressure:**  
41 bard (600 psid)  
10<sup>6</sup> cycles per NFPA T2.06.01R2-2001
- **Typical Burst Pressure:**  
130 bard (2650 psid)
- **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  
Consult sales for other fluid group suitability
- **Materials of Construction:**  
Aluminum alloy head and bowl.

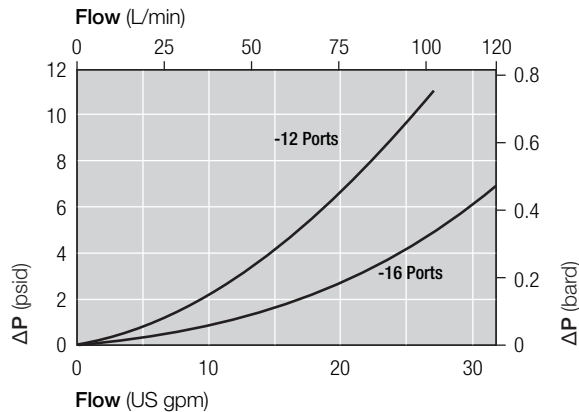
#### Filter Housing

- **Filter Element Burst Pressure:**  
10 bard (150 psid)
- **Ultipleat SRT 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.



### 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 C12 (¾" BSP) threaded ports using AN grade media. Operating conditions 20 L/min flow rate using a hydraulic fluid of 50 cSt and specific gravity (s.g.) 1.2.

#### Total Filter ΔP

$$\begin{aligned} &= \Delta P_{\text{housing}} + \Delta P_{\text{element}} \\ &= (0.07 \times 1.2/0.9) \text{ bard (housing)} \\ &+ ((20 \times 10.62/1000) \times 50/32 \times 1.2/0.9) \text{ bard (element)} \\ &= 0.09 \text{ bard (housing)} + 0.44 \text{ bard (element)} \\ &= \mathbf{0.53 \text{ bard (7.7 psid)}} \end{aligned}$$

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.

# UR209 Series Filters

## Ordering Information

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

### Section 1

#### Housing P/N:

Note: Pall Ultipleat SRT 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.

UR 209H  ++  Z  F1

Table 1      Table 2      Table 3      Table 4

Note: Z indicates fluorocarbon seals are standard. Other options are available; contact Pall. The number F1 at the end of the Housing P/N designates 1 indicator port, fitted with a plastic shipping plug.

#### Seal Kit P/N:

#### UR 209 SKZ

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

Table 1: Housing Port Options

| Code | Port                        |
|------|-----------------------------|
| A12  | ¾" SAE J514 straight thread |
| A16  | 1" SAE J514 straight thread |
| B12  | ¾" NPT Thread               |
| B16  | 1" NPT Thread               |
| C12  | ¾" BSP ISO 228 threads      |
| C16  | 1" BSP ISO 228 threads      |

Table 2: Housing Length Options

| Code | Length (in)* |
|------|--------------|
| 03   | 3            |
| 07   | 7            |

\* Nominal length

Table 3: Housing Bypass Valve Options

| Code | Valve              |
|------|--------------------|
| A    | 1.7 bard (25 psid) |
| G    | 4.5 bard (65 psid) |
| N    | Non-Bypass         |

Table 4: Other Options

| Code | Description  |
|------|--|
| OMIT | Aluminum alloy head and bowl (standard)                            |
| YS45 | Anodized aluminum alloy finish for use with water glycols and HWCF |

### Section 2

#### Element P/N:

UE 209   Z

Table 1      Table 2

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

Table 1: Filter Element Options

| Code | $\beta_{x(c)} \geq 1000$<br>based on ISO 16889 | CST Rating* |
|------|--|-------------|
| AZ   | 3  | 08/04/01    |
| AP   | 5  | 12/07/02    |
| AN   | 7  | 15/11/04    |
| AS   | 12   | 16/13/04    |
| AT   | 22   | 17/15/08    |

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

Table 2: Element Length Options

| Code | Length (in)* |
|------|--------------|
| 03   | 3            |
| 07   | 7            |

\* Nominal length

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

#### Differential Pressure Indicator P/N:

13

Table 1

Note: If no differential pressure indicator is selected, 'B' type blanking plug (P/N 1373772) must be ordered separately and fitted to replace the plastic shipping plug.

Note: Fluorocarbon seals are standard. Other options are available; contact Pall.

Table 1: Differential Pressure Indicator Options

| Code  | Rating             | Indicator   | 'H' Dim.     |
|-------|--------------------|---|--------------|
| 75888 | 1.1 bard (16 psid) | 'FD' Type Visual (auto reset) with thermal lockout  | 15mm (0.6in) |
| 82233 | 3.5 bard (50 psid) |   |              |
| 75887 | 1.1 bard (16 psid) | 'F5' Type Electrical switch (SPDT) maximum 24VDC single wire for switched ground connection | 23mm (0.9in) |
| 79743 | 3.5 bard (50 psid) |   |              |
| 73772 | N/A                | 'FB' Type blanking plug   | 10mm (0.4in) |

1.1 bard (16 psid) rating recommended for 'A' bypass valve  
3.5 bard (50 psid) rating recommended for 'G' bypass valve

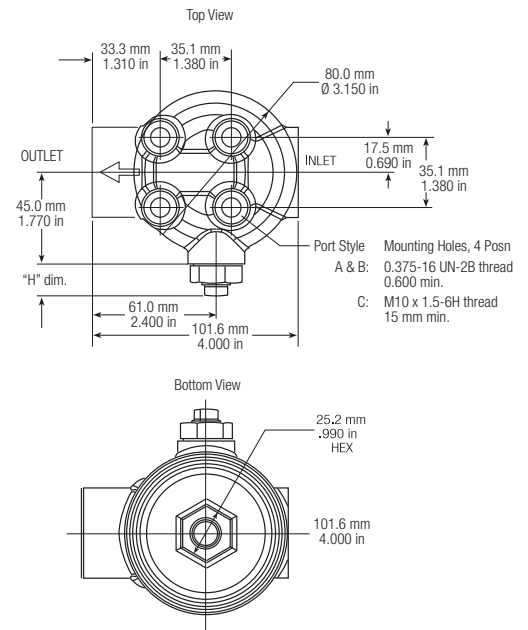
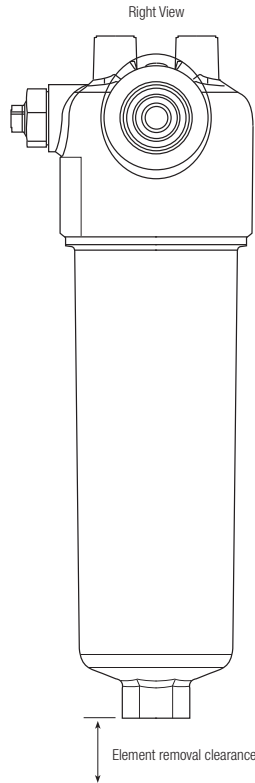
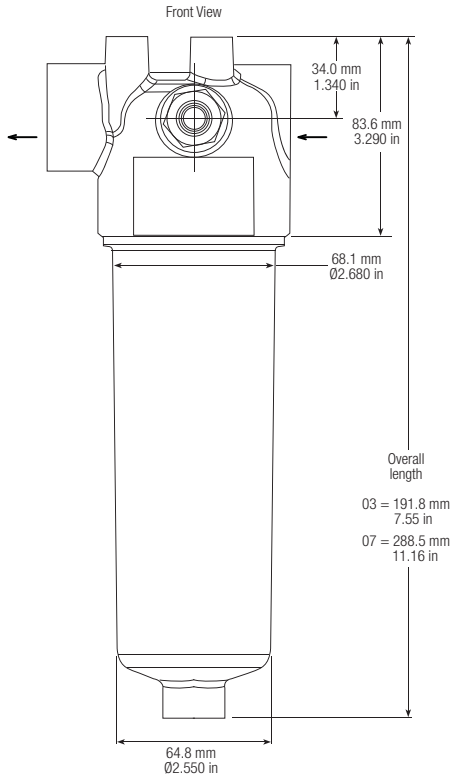
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# Technical Information

| Length Code | Overall Length<br>mm (in) | Element Removal Clearance<br>mm (in) |
|-------------|---------------------------|--------------------------------------|
| 03          | 192 (7.55)                | 69 (2.7)                             |
| 07          | 283 (11.16)               | 69 (2.7)                             |



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EFC Filtration b.v. | P.O. Box 3034 | 1801 GA Alkmaar | The Netherlands  
 T +31 (0) 72 540 5454 | [efcfiltration.com](http://efcfiltration.com) | [info@efcfiltration.com](mailto:info@efcfiltration.com)