

# In-Line Bulk Fuel Coalescing Filter

ICF



Model no. of filter in photograph is:  
ICFC5VS16PG

## Features and Benefits

- New fuel / water separation media technology in a three-phase element construction for high efficiency, single-pass removal of free-water in Ultra-low Sulfur Diesel (ULSD) and Biodiesel fuels
- Prior generation coalescing products no longer provide high-efficiency separation in ULSD and Biofuels
- Can be upstream (suction side) or downstream (pressure side) of transfer pumps
- Helps protect expensive, vital engine components against failures caused by water transferred from the bulk fuel tanks to the vehicle
- Separates emulsified or finely dispersed water from fuel
- For use in single-pass fuel dispensing or multi-pass reservoir clean-up and continuous maintenance

## Application Introduction: The Reason for Better Bulk Fuel Filtration

Coalescing filtration can be a highly effective method to remove water from diesel fuels. Water is typically introduced into the fuel supply by condensation. Water in a vehicle fuel system can reduce lubricity causing seizure of close tolerance parts and increased wear. Water in fuel storage tanks causes rust and promotes microbial growth. Microbial growth in fuel storage systems begins in free water at the tank bottom and can quickly migrate through the fuel. In warm weather, microbial “blooms” can quickly overwhelm and bypass fuel filters causing contamination to reach the fuel injectors. Today’s high pressure (20,000+ psi) fuel injector systems have tighter tolerances and require complete water removal to minimize wear related failures. The ICF Bulk Fuel Coalescing Filter will protect critical equipment and components.



INDUSTRIAL



MOBILE  
VEHICLES



MARINE



MINING



AGRICULTURE



BULK OIL  
FILTRATION

## Applications

Flow Rating: Up to 16 gpm (60 L/min) for ULSD15

Inlet/Outlet Connection: SAE 16

Max. Operating Pressure: 100 psi (7 bar)

Min. Yield Pressure: 400 psi (28 bar)

Rated Fatigue Pressure: 90 psi (6 bar), per NFPA T2.6.1-2005

Temp. Range: -20°F to 165°F (-29°C to 74°C) standard  
32°F to 165°F (0°C to 74°C) with included, optional sight gauge

Bypass Setting: Cracking: 15 psi (1 bar)

Porting Head/Cap: Anodized Aluminum

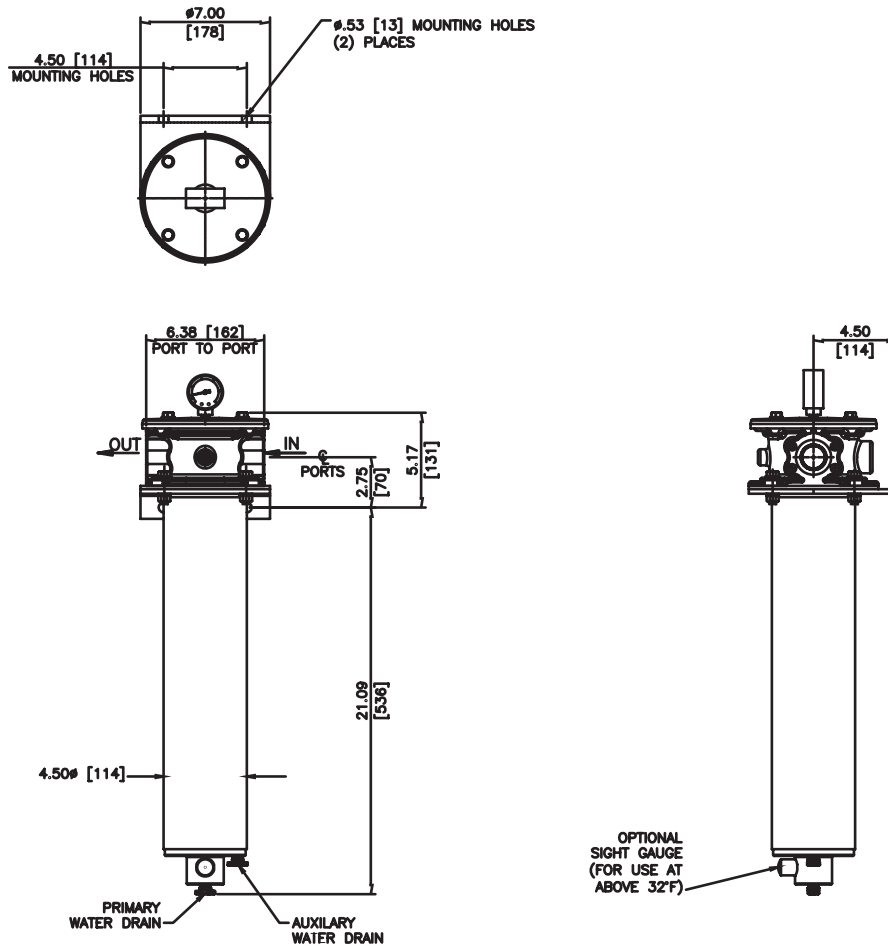
Element Case: Nickel Coated Steel

Weight: 19 lbs (8.6 kg)

Element Change Clearance: 20.00" (508 mm)

## Filter Housing Specifications

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## Element Water Coalescing Performance Information

Element	Pressure Side Coalescing		Suction Side Coalescing	
	Max Flow	Single Pass Efficiency	Max Flow	Single Pass Efficiency
C184Z5V	16 GPM	> 99.5%	CF Contact Factory	> 99.5%

Flow Direction: Inside Out  
 Element Nominal Dimensions: 4.0" (102 mm) O.D. x 18.5" (470 mm) long

Note:  
 Based on ULSD15 with  
 27 Byenes/CM surface  
 tension and 0.25% (2500  
 PPM) water injection

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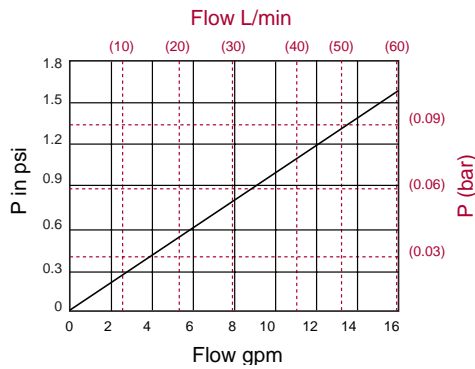
## Fuel Oils

- ULSD15 and similar petroleum diesels
- Biodiesel and blends
- Synthetic diesel and blends

Fluid Compatibility

$\Delta P_{\text{housing}}$

ICF  $\Delta P_{\text{housing}}$  for fluids with sp gr= 0.86



sp gr = specific gravity

$\Delta P_{\text{element}}$

$\Delta P_{\text{element}} = \text{flow} \times \text{element } \Delta P \text{ factor} \times \text{viscosity factor}$

El.  $\Delta P$  factors @ 37 SUS (3 cSt).

C184Z5V = 0.46

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

Viscosity factor: Divide viscosity by 37 SUS (3 cSt).

Pressure Drop Information Based on Flow Rate and Viscosity

Notes

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

**Exercise:** Determine  $\Delta P$  at 16 gpm (60 L/min) for ICFC5VS16PG

**Solution:**

$$\Delta P_{\text{housing}} = 1.2 \text{ psi} = [0.08 \text{ bar}]$$

$$\Delta P_{\text{element}} = 16 \times 0.46 = 7.3 \text{ psi}$$

$$\Delta P_{\text{total}} = 1.2 + 7.3 = 8.5 \text{ psi}$$

## Filter Model Number Selection

### How to Build a Valid Model Number for a Schroeder ICF:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7
ICF						

**Example:** Note: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	
ICF	C	5	V	S16	PG		= ICFC5VS16PG

BOX 1	BOX 2	BOX 3	BOX 4
<b>Filter Series</b>	<b>Element Series</b>	<b>Element Particulate Media Type</b>	<b>House Sealing Material</b>
ICF	C= C184Z5V	5 = 5 µm SYN./COALESCING	V = Viton®
BOX 5	BOX 6	BOX 7	
<b>Porting</b>	<b>Dirt Alarm® Options</b>	<b>Additional Options</b>	
S16 = SAE 16	Omit = None PG = Pressure Gauge	Omit = None (Standard)  *For automatic drain option, contact factory.	

*\*Note: Included, optional sight gauge (for use only >32 deg. F)*

**NOTES:**

Box 4. Viton® is a registered trademark of DuPont Dow Elastomers.