

# High Performance Filters W-FCF Range Catalogue

Rev2101

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**WASP**<sup>®</sup>   
Pure Fuel Systems

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## Contents

Introduction .....	3
W-FCF-15.....	4
W-FCF-15-DX/W-FCF-15-DXM.....	5
W-FCF-25.....	6
W-FCF-25-DX/W-FCF-25-DXM.....	7
W-FCF-60.....	8
W-FCF-60-DX/W-FCF-60-DXM.....	9
W-FCF-60/2 .....	10
Pressure Transducer (W-PFS-PS-0010) .....	11
Water in fuel sensor (SWPG724) .....	12
Vacuum Switch (C-Vac-Switch-Adj).....	13
Pressure Switch (C-Press-Switch-Adj) .....	14
Differential pressure gauge/switch (W-FCF-DP-KIT).....	15

## Introduction

The WASP W-FCF range of high performance fuel filter/coalescer units are designed to clean fuel to an ultra-fine level. A typical application for this range would be in secondary or engine stage filtration, or final stage polishing filter. These units are designed to clean EN590 and similar diesel based fuels to a very high level.

- Diesel / middle distillate fuel cleaning
- Installation on pressure or suction side of pump
- Particulate removal to 2 micron absolute with free/emulsified water separation
- Particulate removal to 12 micron with “cleanup” filters
- Extremely efficient fuel processing
- No external power required
- Optional water in fuel sensor
- Integrated water drain tap
- Steel construction
- Minimal restriction
- Simplex or Duplex units available
- Monitoring options available

All units have a maximum design pressure of 5 bar

Model	Type	Flow Rate *	Ports	Clean Pressure Drop	Change Pressure **
W-FCF-15	Simplex	15 lit/min	3/4" BSP-P	0.085 bar (85 mbar)	0.44 bar
W-FCF-15-DX(M)	Duplex	15 lit/min	3/4" BSP-P	0.085 bar (85 mbar)	0.44 bar
W-FCF-25	Simplex	25 lit/min	1" BSP-P	0.085 bar (85 mbar)	0.44 bar
W-FCF-25-DX(M)	Duplex	25 lit/min	1" BSP-P	0.085 bar (85 mbar)	0.44 bar
W-FCF-60	Simplex	60 lit/min	1 1/2" BSP-P	0.085 bar (85 mbar)	0.44 bar
W-FCF-60-DX(M)	Duplex	60 lit/min	1 1/2" BSP-P	0.085 bar (85 mbar)	0.44 bar
W-FCF-60-2	Double	120 lit/min	2" BSP-P	0.085 bar (85 mbar)	0.44 bar

\* Based on a clean filter element at the rated flow, using standard diesel. Approx figure, contact WASP PFS Ltd for higher flow rates

\*\* Based on an element change at 0.35 bar above initial pressure drop.

Units can be used on suction or pressure side, and have been certified for use up to 5bar, pressure tested to 7.5bar.

The input port is at the bottom of each unit, there are water drains on each model, pressure monitoring ports

### W-FCF-15

- Simplex unit
- Fuel flow rates up to 15 lit/min with minimal restriction
- 2 micron abs particulate removal
- Free and emulsified water removal
- Over 99% efficiency
- 5 bar max pressure
- Can be used pressure or suction side
- Input and output 3/4" BSP-P female
- Two water in fuel sensing ports (M18x1.8)
- Four filter condition sensing ports (1/8" NPTF)
- Multiple mounting positions using central clamp

#### Specifications

Fuel type	EN590, MDO, Diesel, Gas Oil
Flow rate	0-15 lit/min
Input (bottom)	3/4" BSP female, parallel
Output (top)	3/4" BSP female, parallel
Filter condition ports	1/8" NPTF
Material	Steel
Filtration	2 mic abs or 12 mic particulate
	Free water (99.6% eff.)**
	Emulsified water (99.2% eff.)**
Materials	Steel filter Housing
	Steel fittings
Max pressure	5 bar
Finish	Blue painted
Height	400mm
Element removal	350mm min
Width inc bracket*	230mm
Weight (dry)	6kg
Clean restriction	85mbar
Change restriction	440mbar

\* Max width, assumes output port facing out

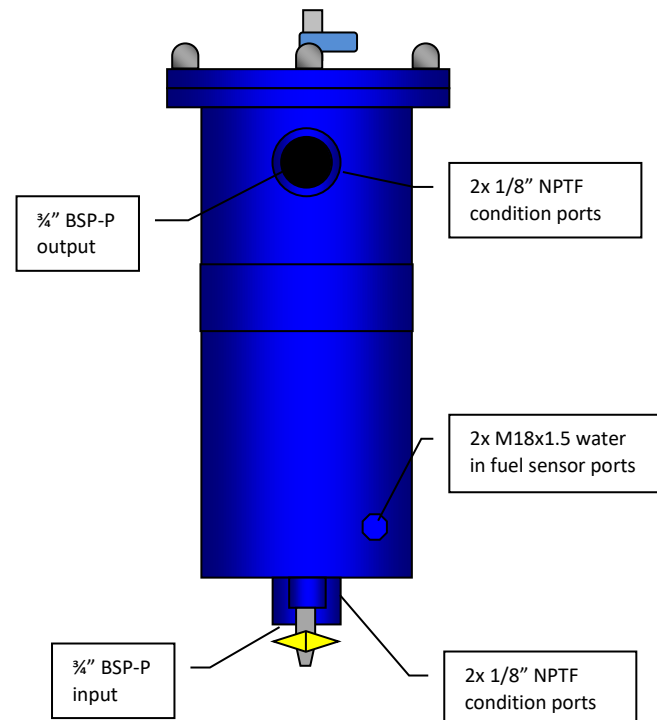
\*\* with 2 micron element only

All weights and dimensions are approx

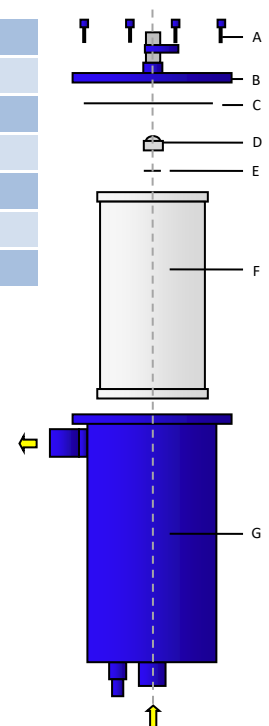
Efficiencies quotes represent single pass filtration. Max water 5000ppm single pass

#### Replacement parts

2 micron with water separation element	W-FCF-15-ELE
12 micron particulate element	W-FCF-15-ELE-CLEANUP
Lid Gasket	W-FCF-15-GK



A	6x Dome Nuts
B	Lid and air bleed
C	Lid gasket
D	Element dome nut
E	Nut gasket
F	1x Element (2 Stage)
G	Housing



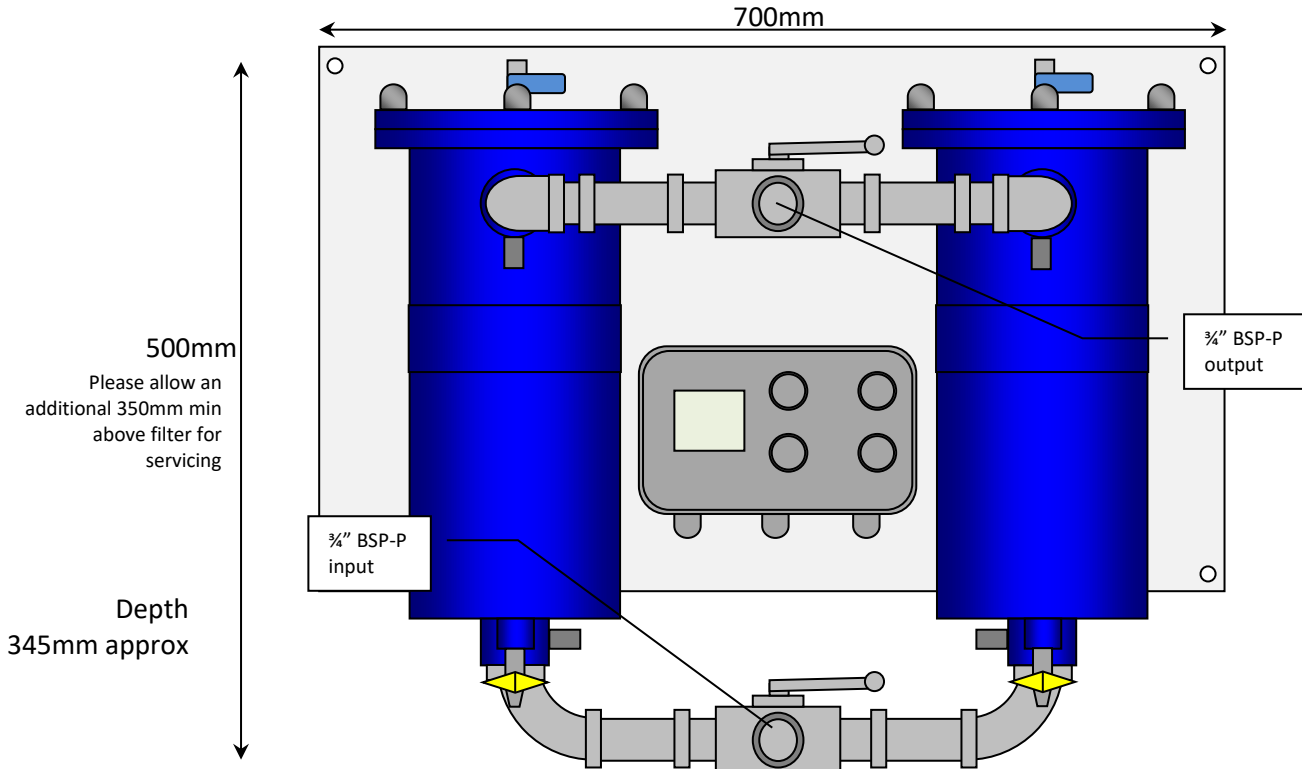
Please refer to later sections of this catalogue for sensor options

Air bleed on filter lid should not be opened when fuel is flowing

Water drain on underside should only be opened when it is safe to do so

**W-FCF-15-DX/W-FCF-15-DXM**

Duplex version of the W-FCF-15, either with (M) or without monitoring option.



**Specification**

Fuel type	EN590, MDO, Diesel, Gas Oil
Input (bottom)	3/4" BSP female, parallel
Output (top)	3/4" BSP female, parallel
Fuel flow	0-15 litres per minute
Mounting base	White or Blue non-rot polymer
Filtration	2 mic abs or 12 mic particulate
	Free water (99.6% eff.)*
	Emulsified water (99.2% eff.)*
Weight (dry)	17kg approx
Materials	Steel filter Housing
	Steel fittings
Mounting holes	10mm
<b>Monitored units have this additional specification</b>	
Power (for monitored units)	24v DC, approx 0.25a
Volt free contact outputs	Service left filter
	Drain water from left filter
	Service right filter
	Drain water from right filter

Duplex assembly filter, with optional monitored water in fuel and either vacuum or pressure sensing (selectable at time of ordering). Unit includes 4 volt free contact outputs for connection to remote monitoring system.

For servicing, spare parts and other specification, please refer to the simplex W-FCF-15 unit.

The duplex and monitored duplex assemblies have two filter elements (one per side) and two lid gaskets (one per side).

\*2 micron element only

### W-FCF-25

- Simplex unit
- Fuel flow rates up to 25 lit/min with minimal restriction
- 2 micron abs particulate removal
- Free and emulsified water removal
- Over 99% efficiency
- 5 bar max pressure
- Can be used pressure or suction side
- Input and output 1" BSP-P female
- Two water in fuel sensing ports (M18x1.8)
- Four filter condition sensing ports (1/8" NPTF)
- Multiple mounting positions using central clamp

### Specifications

Fuel type	EN590, MDO, Diesel, Gas Oil
Flow rate	10-25 lit/min
Input (bottom)	1" BSP female, parallel
Output (top)	1" BSP female, parallel
Filter condition ports	1/8" NPTF
Material	Steel
Filtration	2 mic abs or 12 mic particulate
	Free water (99.6% eff.)**
	Emulsified water (99.2% eff.)**
Materials	Steel filter Housing
	Steel fittings
Max pressure	5 bar
Finish	Blue painted
Height	525mm
Element removal	350mm min
Width inc bracket*	312 mm
Weight (dry)	10 kg
Clean restriction	85mbar
Change restriction	440mbar

\* Max width, assumes output port facing out

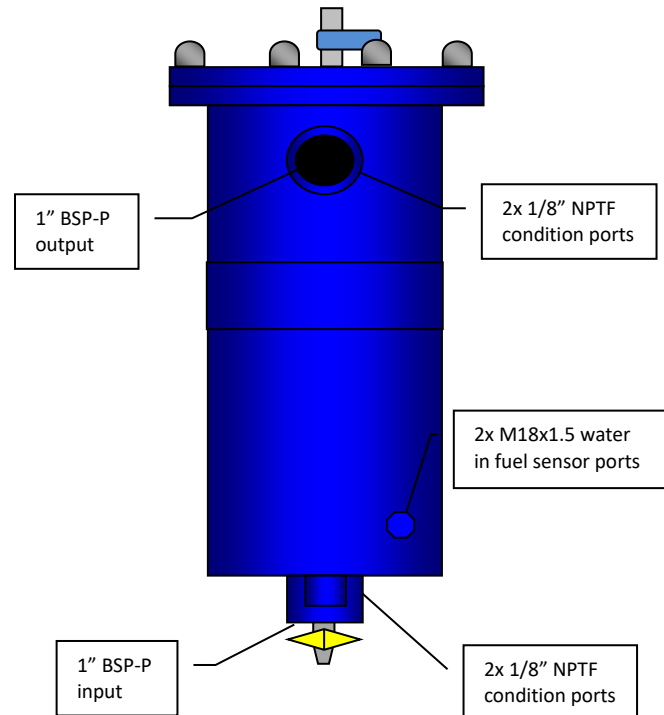
\*\*with 2 micron element

All weights and dimensions are approx

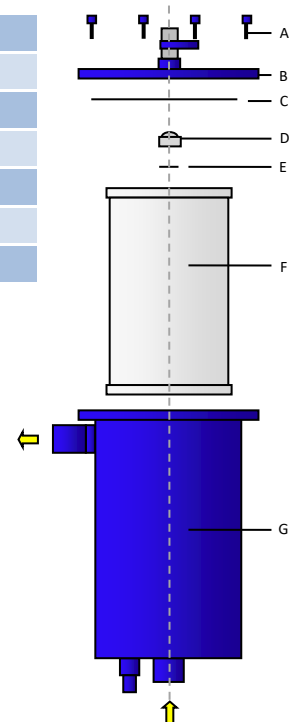
Efficiencies quotes represent single pass filtration. Max water 5000ppm single pass

### Replacement parts

2 micron with water separation element	W-FCF-25-ELE
12 micron particulate element	W-FCF-25-ELE-CLEANUP
Lid Gasket	W-FCF-25/60-GKV



A	8x Dome Nuts
B	Lid and air bleed
C	Lid gasket
D	Element dome nut
E	Nut gasket
F	1x Element (2 Stage)
G	Housing



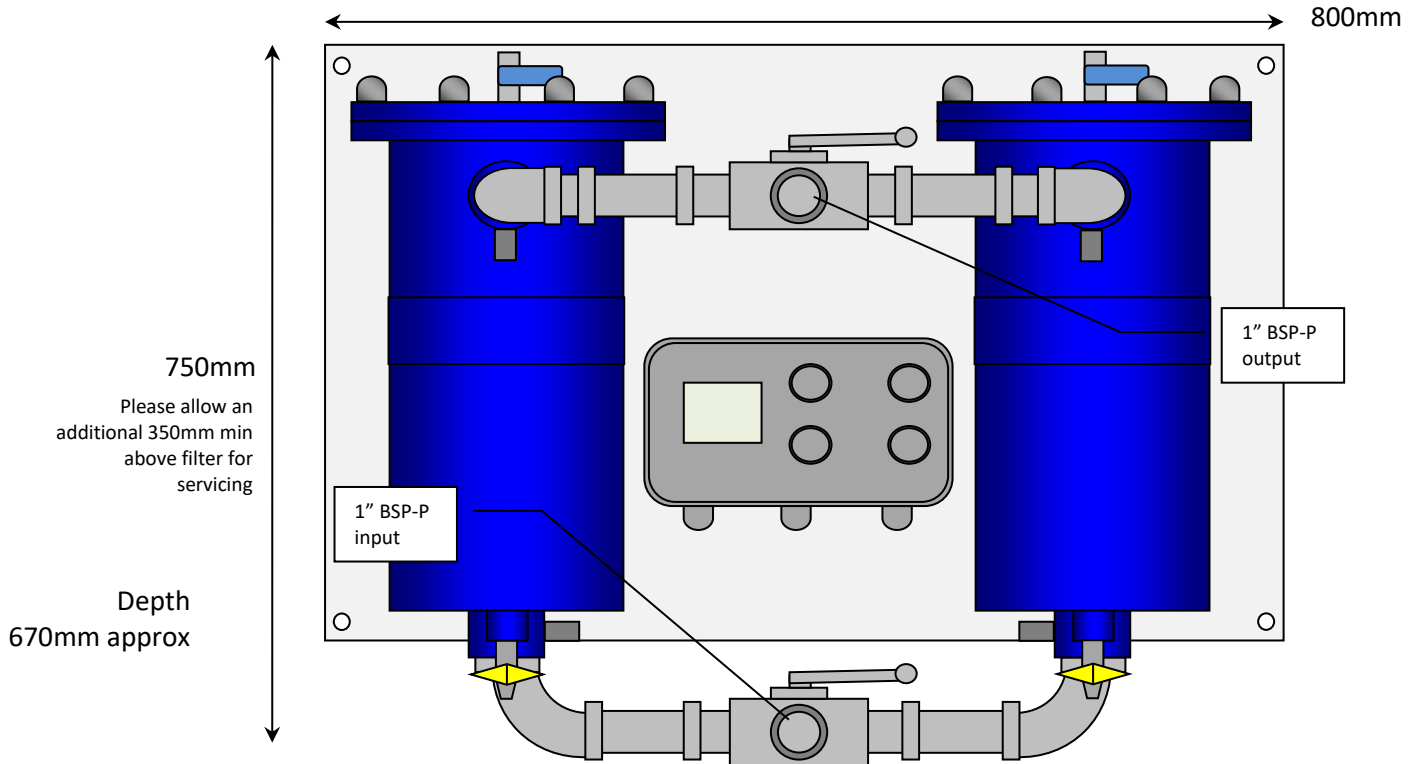
Please refer to later sections of this catalogue for sensor options

Air bleed on filter lid should not be opened when fuel is flowing

Water drain on underside should only be opened when it is safe to do so

**W-FCF-25-DX/W-FCF-25-DXM**

Duplex version of the W-FCF-25, either with (M) or without monitoring option.



**Specification**

Fuel type	EN590, MDO, Diesel, Gas Oil
Input (bottom)	1" BSP female, parallel
Output (top)	1" BSP female, parallel
Fuel flow	10-25 litres per minute
Mounting base	White or Blue non-rot polymer
Filtration	2 mic abs/12 mic particulate
	Free water (99.6% eff.)*
	Emulsified water (99.2% eff.)*
Weight (dry)	29kg approx
Materials	Steel filter Housing
	Steel fittings
Mounting holes	10mm
<b>Monitored units have this additional specification</b>	
Power (for monitored units)	24v DC, approx 0.25a
Volt free contact outputs	Service left filter
	Drain water from left filter
	Service right filter
	Drain water from right filter

\* With 2 micron element only

Duplex assembly filter, with optional monitored water in fuel and either vacuum or pressure sensing (selectable at time of ordering). Unit includes 4 volt free contact outputs for connection to remote monitoring system.

For servicing, spare parts and other specification, please refer to the simplex W-FCF-25 unit.

The duplex and monitored duplex assemblies have two filter elements (one per side) and two lid gaskets (one per side).

**W-FCF-60**

- Simplex unit
- Fuel flow rates up to 60 lit/min with minimal restriction
- 2 micron abs particulate removal
- Free and emulsified water removal
- Over 99% efficiency
- 5 bar max pressure
- Can be used pressure or suction side
- Input and output 1.5" BSP-P female
- Two water in fuel sensing ports (M18x1.8)
- Four filter condition sensing ports (1/8" NPTF)
- Multiple mounting positions using central clamp

**Specifications**

Fuel type	EN590, MDO, Diesel, Gas Oil
Flow rate	25-60 lit/min
Input (bottom)	1.5" BSP female, parallel
Output (top)	1.5" BSP female, parallel
Filter condition ports	1/8" NPTF
Material	Steel
Filtration	2 mic abs or 12 mic particulate
	Free water (99.6% eff.)*
	Emulsified water (99.2% eff.)*
Materials	Steel filter Housing
	Steel fittings
Max pressure	5 bar
Finish	Blue painted
Height	835mm
Element removal	450mm min
Width inc bracket*	310mm
Weight (dry)	15 kg
Clean restriction	85mbar
Change restriction	440mbar

\* Max width, assumes output port facing out

\*\* with 2 mic element

All weights and dimensions are approx

Efficiencies quotes represent single pass filtration. Max water 5000ppm single pass

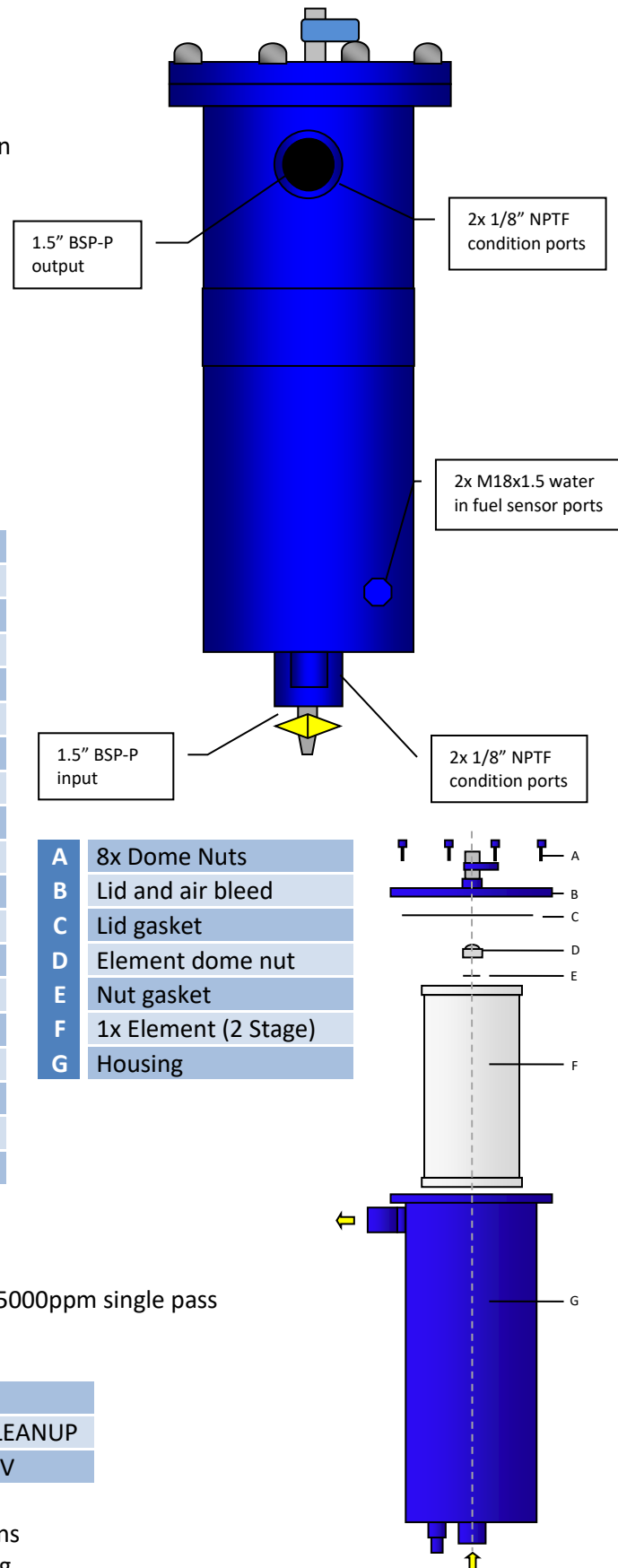
**Replacement parts**

2 micron with water separation element	W-FCF-60-ELE
12 micron particulate element	W-FCF-60-ELE-CLEANUP
Lid Gasket	W-FCF-25/60-GKV

Please refer to later sections of this catalogue for sensor options

Air bleed on filter lid should not be opened when fuel is flowing

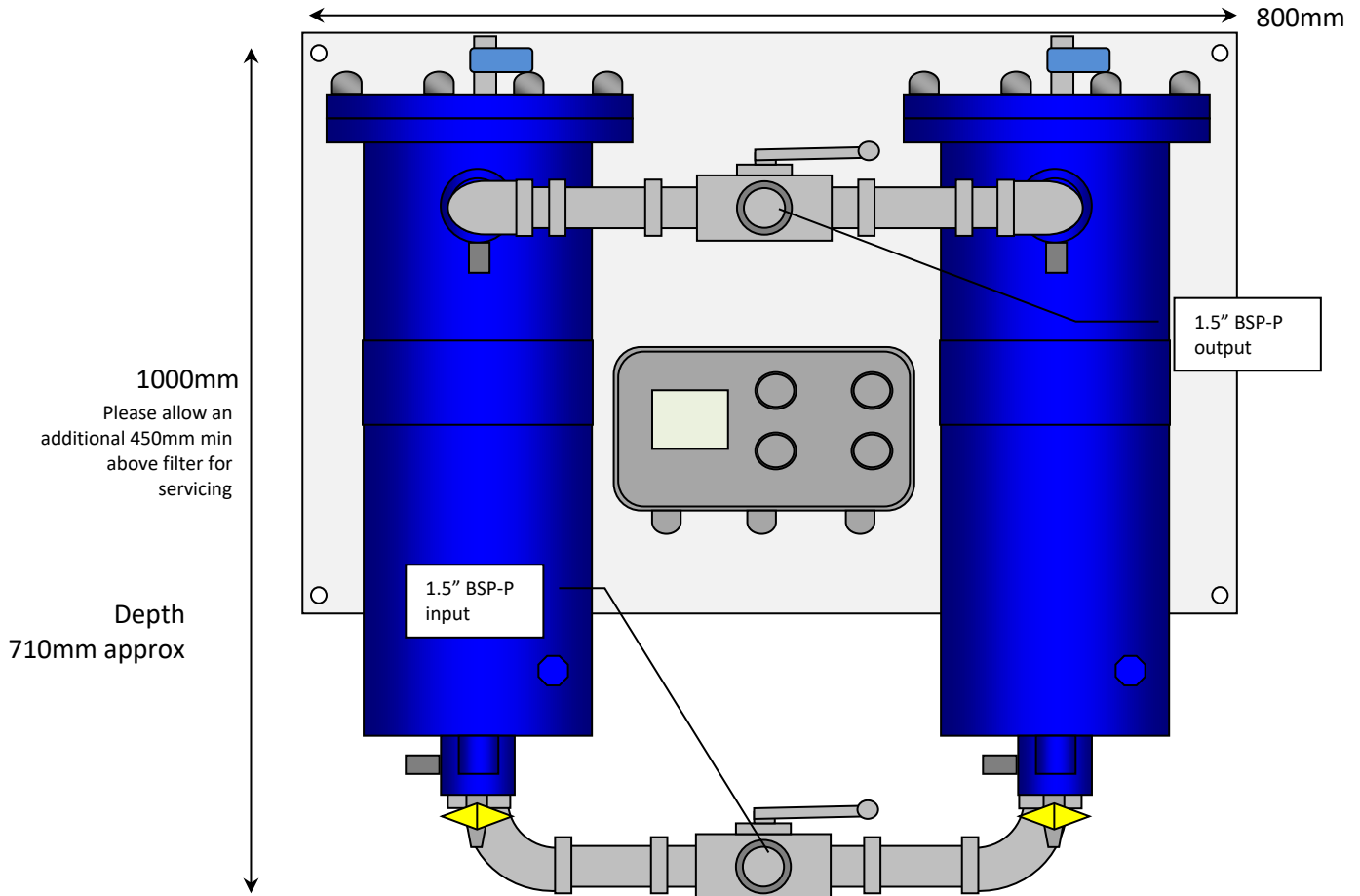
Water drain on underside should only be opened when it is safe to do so





**W-FCF-60-DX/W-FCF-60-DXM**

Duplex version of the W-FCF-60, either with (M) or without monitoring option.



**Specification**

Fuel type	EN590, MDO, Diesel, Gas Oil
Input (bottom)	1.5" BSP female, parallel
Output (top)	1.5" BSP female, parallel
Fuel flow	25-60 litres per minute
Mounting base	White or Blue non-rot polymer
Filtration	2 mic abs or 12 mic particulate
	Free water (99.6% eff.)*
	Emulsified water (99.2% eff.)*
Weight (dry)	52kg approx
Materials	Steel filter Housing
	Steel fittings
Mounting holes	10mm
<b>Monitored units have this additional specification</b>	
Power (for monitored units)	24v DC, approx 0.25a
Volt free contact outputs	Service left filter
	Drain water from left filter
	Service right filter
	Drain water from right filter

Duplex assembly filter, with optional monitored water in fuel and either vacuum or pressure sensing (selectable at time of ordering). Unit includes 4 volt free contact outputs for connection to remote monitoring system.

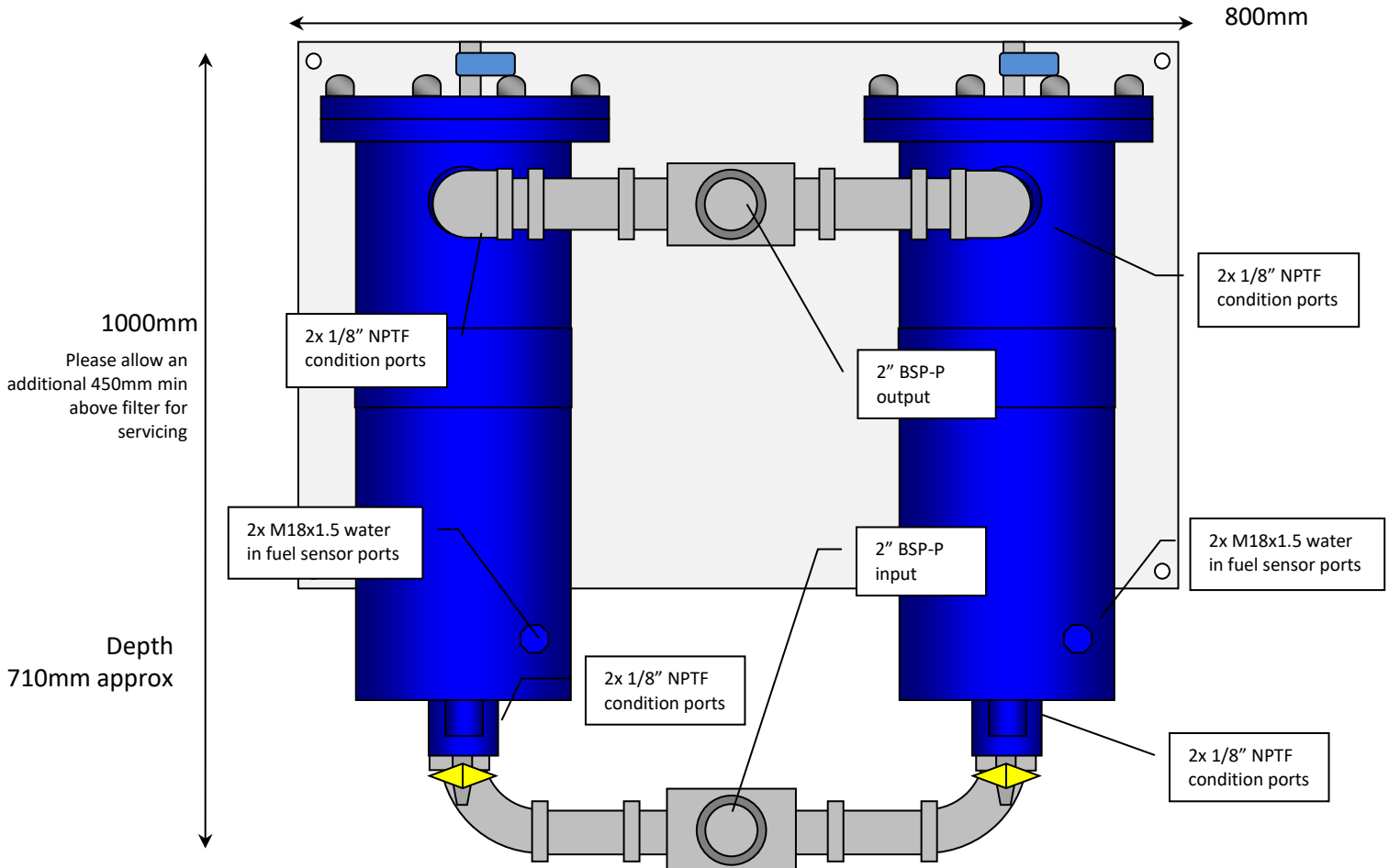
For servicing, spare parts and other specification, please refer to the simplex W-FCF-60 unit.

The duplex and monitored duplex assemblies have two filter elements (one per side) and two lid gaskets (one per side).

\*with 2 micron element

**W-FCF-60/2**

Twin bodied simplex filter, 120 litres per minute



**Specification**

Fuel type	EN590, MDO, Diesel, Gas Oil
Input (bottom)	1.5" BSP female, parallel
Output (top)	1.5" BSP female, parallel
Fuel flow	60-120 litres per minute
Mounting base	White or Blue non-rot polymer
Filtration	2 mic abs or 12 mic particulate
	Free water (99.6% eff.)*
	Emulsified water (99.2% eff.)*
Weight (dry)	52kg approx
Materials	Steel filter Housing
	Steel fittings
Mounting holes	10mm
Filter condition ports	1/8" NPTF
Water in fuel sensor ports	M18x1.5 female

Twin bodied filter with a single input and single output port. Both filters work in parallel to achieve double the flow rate of the standard W-FCF-60.

For servicing, spare parts and other specification, please refer to the simplex W-FCF-60 unit.

\*with 2 micron element

**Pressure Transducer (W-PFS-PS-0010)**

Model: W-PFS-PS-0010

Pressure transducer which fits directly into the W-FCF range's condition monitoring port (1/8" NPTF). Using two of these, one in the input condition port and one in the output condition port allow the user to monitor a differential pressure in the filter housing.

For consistent high levels of performance, reliability and stability, these sputtered thin film units offer unbeatable performance in a small package size. They are all-stainless steel wetted parts to ensure compatibility with fuel sensing applications. At the heart of the sensor is a sputter element that also provides exceptional temperature specifications. Plus they are manufactured using the latest automated equipment, producing the most consistent and best price to performance sensor on the market today.

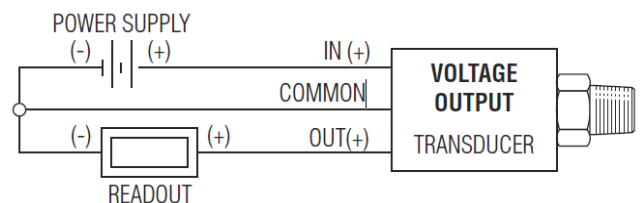
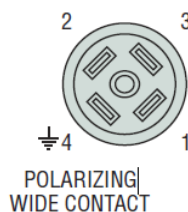
The compact construction of both these series makes them ideal for installation where space is at a premium. And they are fully RoHS compliant.



Voltage output	0v to 10v DC
Pressure range sensed	0 to 10 barG
Supply voltage	12v to 30v DC (4.5ma max)
Port	1/8" NPTF male (to fit W-FCF filter)
Electrical Connection	Industrial DIN (mini din, 3 wire connection plus earth)
Long term drift	0.2% FS/YS (non-cumulative)
Accuracy	0.25% FS
Thermal Error	1.5% FS/100 deg C
Compensated Temperatures	-40 to +125 deg C
Operating Temperatures	-40 to +125 deg C
Zero Tolerance	0.5% span
Span Tolerance	0.5% span
Response Time	1ms
Fatigue Life	Designed for more than 100,000,000 cycles
Wetted Parts	Stainless Steel
Protection	IP67
Vibration	40G peak to peak sinusoidal
EMC	100V/m
Weight	35g

Each sensor is supplied with a mini DIN plug.

- Pin 1 – Output
- Pin 2 – Voltage In (+) DC
- Pin 3 – Common (0v) DC
- Pin 4 – Earth (no connection)



**Water in fuel sensor (SWPG724)**

Model: SWPG724

This simple, reliable water in fuel sensor is perfect for fitment to the W-FCF range. Its two probes work by passing a tiny current (less than 4ma) between them, and sensing when the resistance changed at the points from diesel to water. At that point the output is triggered.

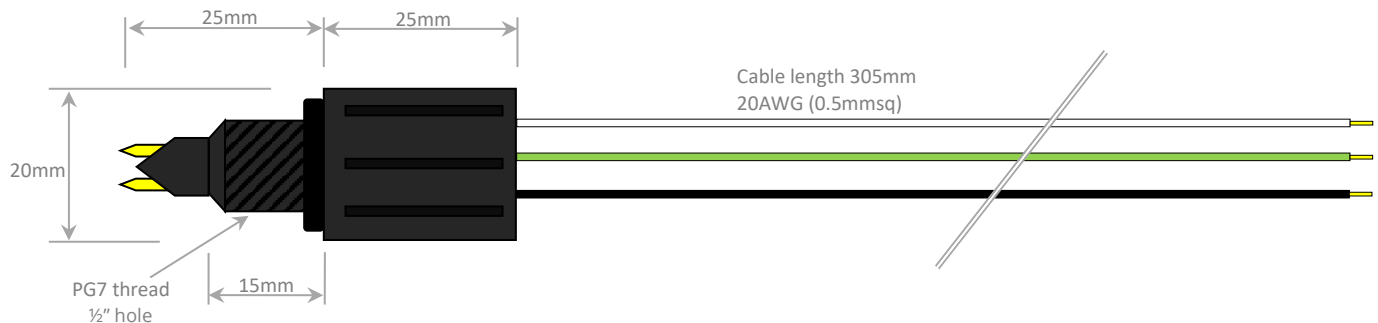
This unit also features a 2 second “alive” pulse when the sensor is first switched on, and has a negligible delay between the sense and output.

*This sensor can be supplied with an M18 to PG7 adaptor for direct fitment to W-FCF range, please ask for details*

**Specification**

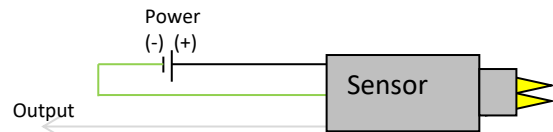
<b>Power</b>	10-32v DC
<b>Output</b>	Switches to ground on water detection
<b>Connection</b>	PG7 (1/2"x20UNF)
<b>Adaptors</b>	M18 to PG7 available
<b>Body</b>	Black epoxy resin
<b>Temperature</b>	-40 to +125 deg C

Approximate dimensions



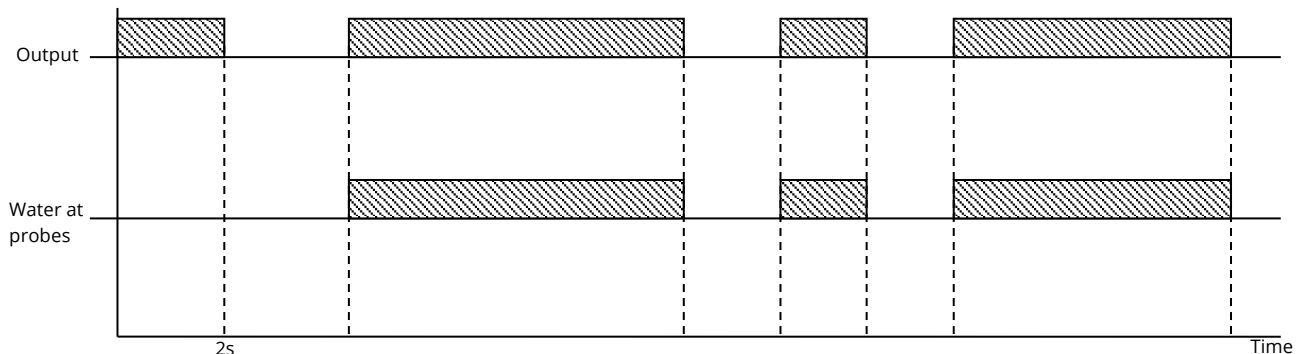
**Connections**

<b>Black wire</b>	Supply voltage (+) DC
<b>Green wire</b>	Ground (0v) DC
<b>White wire</b>	Output



Output can be used to switch PLCs, lamps, relays etc. Maximum output to positive power, 1.2w.

**Timing chart**



## Vacuum Switch (C-Vac-Switch-Adj)

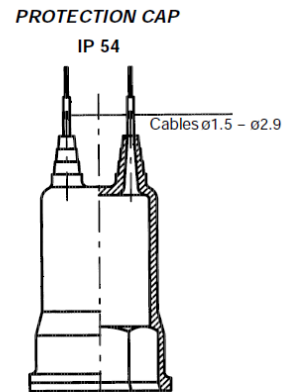
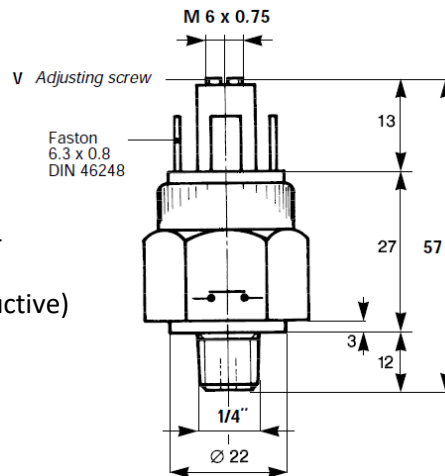
Model: C-VAC-SWITCH\_ADJ

### Vacuum switch SPST N.O for service alarms

In order to trigger an electrical signal when a filter has reached its service level, the use of a vacuum switch is important. For the vacuum side filters, the WASP "C-VAC-SWITCH-ADJ" switch is the ideal unit.

#### Specification

Adjusting range	200 - 900 mbar vacuum
Thread	¼" BSP taper
"F" Contact holder	Nylon 6.6
Protection cap black	NBR
Membrane	Viton
Body Tropicalized	steel
Electric contact	Silver plated copper at 3 µ
Maximum voltage	48 V
Current	0.5A (resistive), 0.2A (inductive)
Working temperature	-5° +60 °C
Protection without cap	IP 00
Protection with cap	IP 54
Mechanical life	10,000,000 cycles
Tightening torque	5 N max.
Contacts	SPST Normally open; closed when set point vacuum is reached



Our adjustable membrane vacuum switches have been designed to check and signal the vacuum status in diesel filtration systems. The sensitive Viton membrane detects changes in vacuum, and when it reaches the user-set level, closes the normally open electrical contacts. This allows the user to utilise the switch to trigger a PLC, lamp, buzzer or similar device to indicate a service is required.

Switches can be supplied separately (c/w protective cap), with fittings to suit the sampling ports, or with in-line port fittings.



## Pressure Switch (C-Press-Switch-Adj)

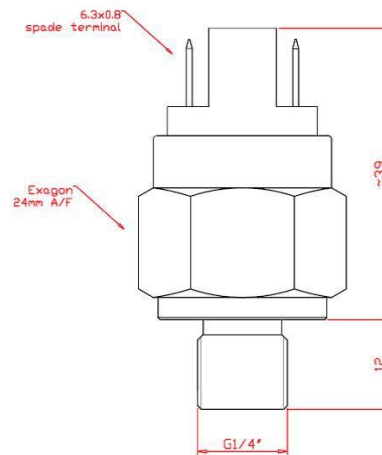
Model: C-PRESS-SWITCH\_ADJ

### Pressure switch SPST N.O for service alarms

In order to trigger an electrical signal when a filter has reached its service level, the use of a vacuum switch is important. For the pressure side filters, the WASP "C-PRESS-SWITCH-ADJ" switch is the ideal unit.

#### Specification

Adjusting range	1-10 bar pressure
Thread	¼" BSP parallel
Protection cap black	NBR
Membrane	Viton
Body Tropicalized	steel
Electric contact	Silver plated copper at 3 µ
Maximum voltage	48 V
Current	0.5A (resistive), 0.2A (inductive)
Working temperature	-5° +60 °C
Protection without cap	IP 00
Protection with cap	IP 54
Mechanical life	10,000,000 cycles
Tightening torque	5 N max.
Contacts	SPST Normally open; closed when set point pressure is reached



Our adjustable membrane pressure switches have been designed to check and signal the pressure status in diesel filtration systems. The sensitive Viton membrane detects changes in pressure, and when it reaches the user-set level, closes the normally open electrical contacts. This allows the user to utilise the switch to trigger a PLC, lamp, buzzer or similar device to indicate a service is required.

Switches can be supplied separately (c/w protective cap), with fittings to suit the sampling ports, or with in-line port fittings. Image below shows optional in-line fittings.



### Differential pressure gauge/switch (W-FCF-DP-KIT)

Model: W-FCF-DP-KIT

- 0-15 PSID switch/gauge to monitor W-FCF range of filters
- Recommended switching point for W-FCF units is 5 PSID
- Adjustable set point
- Face mounted
- Supplied with suitable bracket for foot mounting

As an alternative to the WASP pressure transducers, this mechanical gauge with internal electrical switch allows for an immediate visual indication as to the filter condition.

It is adjustable, but for the W-FCF range, we recommend a setting of 5 PSID. Once setup and once 5 PSID has been sensed between the two connection ports on the rear, the internal NO contact closes. This means it is possible to electrically connect this unit to a lamp, buzzer or PLC.

Contents:	1x	Differential pressure gauge with integrated electronic N.O. switch
	1x	Mounting bracket for gauge
	2x	1m length hoses c/w fittings to mate to gauge
	2x	1/8" NPTF fittings to connect hose to W-FCF unit

#### Hose specification

- Supplied with appropriate fittings to connect directly to W-FCF
- 2x 1m hose lengths
- 3mm Nylon core, coated in synthetic fibre braid and a polyurethane cover
- Will not swell or absorb fluids
- Brass/Steel swaged fittings for tough applications
- Max working pressure 2500psi
- Minimum burst pressure 10000psi

