

Water Treatment



Engineering & Construction

**Filtration
FAS Mod.**

OVERVIEW

FAS multilayer filters can retain physical impurities, sand and mud, suspended substances in water, the iron in an oxidised form, which cause water turbidity. If turbidity is also caused by a modest quantity of fine colloidal substances (almost always present in surface watercourses) FAS filters offer excellent performance if used after an "in line" flocculation treatment, envisaging the direct dosage into the filter delivery lines of a specific product that aids the agglomeration of the dispersed substances into micro-flakes. If used with in-line pre-flocculation, sometimes, FAS multilayer filters can reduce, drastically, the colour and bacterial charge in water. The choice of the filter bed has been studied to allow a volume filtration with high filtration speeds and enabling long running cycles.

Periodic filter washing (backwashing with water and final washing) enables the expulsion of the retained impurities and clearing of the filter bed.

APPLICATIONS

- Wellwater filtration
- Surface water filtration (river, lake) with in line pre-flocculation.
- Pre-oxidised iron filtration
- Pre-treatment of reverse osmosis plants for non brackish waters
- Industrial water filtration
- Potabilization

OPERATING DATA

- | | | |
|---|---------|------|
| ➤ Operating pressure min/max | 2.5/5 | bar |
| ➤ Project/testing pressure | 5/7.5 | bar |
| ➤ Backwashing pressure | 1.5 | bar |
| ➤ Water temperature range | 3÷40 | °C |
| ➤ Electric power voltage/frequency | 220/50 | V/Hz |
| ➤ Electric absorption | 20 | W |
| ➤ Load losses with blocked filter (values read on pressure gauges) medium/high flow | 0.7/1.2 | bar |
| ➤ Service station for valve control | 5-7 | bar |

CONSTRUCTION CHARACTERISTICS

Models from FAS 45⁽¹⁾ to FAS 160

- Tank: vertical cylindrical in electro-welded carbon steel with convex bottoms, complete with 2 inspection hatches for loading filtering media, supplied in bags. The interior and exterior tanks are sanded to a finish class of SA 2.5. The internal surface is subsequently treated with a coat of epoxy food paint to obtain a total dry film of 250 µm. The external surface, after a coat of epoxy base, is protected with epoxy base paint RAL 5012.
- Water distribution system: the lower distributor comprises a robust filter-nozzle star with calibrated holes in PVC/PP. The upper section is fitted with a flow break disk with a calibrated design.
- Automatic valves: butterfly type in painted cast iron, lens in nodular cast iron, double pneumatic actuator with relative solenoid valve. On FAS 45 and FAS 55 models, the valves are membrane type with pneumatic control.
- Filter piping in AISI 304 stainless steel, flat stub in AISI 304, flanges in hard aluminium.
- Pressure gauges diameter 63 mm, scale 0-10 bar, complete with pressure gauge holder valve and test point.

Models from FAS 180 to FAS 250

- Tank: vertical cylindrical in electro-welded carbon steel with convex bottoms, complete with 3 inspection hatches for loading filtering media, supplied in bags. The interior and exterior tanks are sanded to a finish class of SA 2.5. The internal surface is subsequently treated with a coat of epoxy food paint to obtain a total dry film of 250 µm. The external surface, after a coat of epoxy base, is protected with epoxy base paint RAL 5012.
- Water distribution system: the lower distribution system comprises a nozzle plate complete with nozzles and calibrated outlets secured with locknuts. Upper distribution is guaranteed by a central conveyor which terminal section is an upturned truncated cone form.
- Automatic valves: butterfly type in painted cast iron, lens in nodular cast iron, double pneumatic actuator with relative solenoid valve.
- Filter piping in AISI 304 stainless steel, flat stub in AISI 304, flanges in hard aluminium.
- Pressure gauges diameter 100 mm, scale 0-10 bar, complete with pressure gauge holder valve and test point.

OPTIONS

PVC filter piping is also available, with PVC pneumatic control valves (FAS-PVC Model)

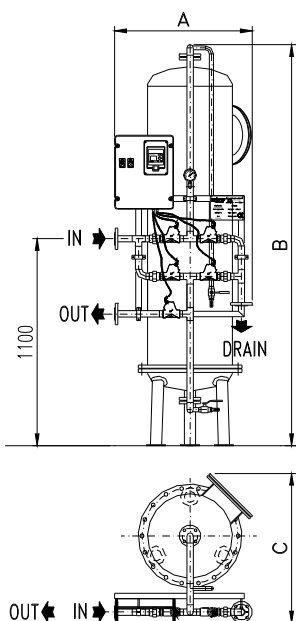
AUTOMATION

- Filter operation and washing cycle are ensured by solenoid valves, pneumatically connected to the valves on the filter piping, and electrically powered by a PLC fitted with an operator panel and display.
- The solenoid valves and PLC are inserted in a small panel in anti-corrosion material with IP55 protection rating.
- Operating times, backwashing and final washing are adjustable as required according to the effective working conditions.
- Voltage-free contacts are available for an external permissive if required (differential pressure switch, etc).
- Start-up can also be manual.

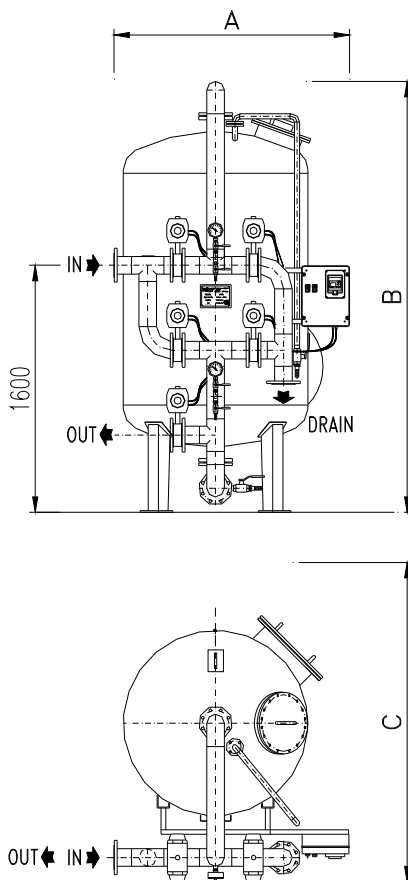
FILTRATION MEDIA

The upper section of the filter bed is made of selected anthracite with very high chemical-physical and mechanical properties suitable to favour flocculation reactions. Its objective is to withhold the flocculation and also to filter the large impurities so that the lower layer can retain the finer impurities. The lower layer is made of extremely pure quartzite with selected particle size. Below the filter bed there are one or more layers of inert material (quartziferous sand) with pre-set piece size and layer depth.

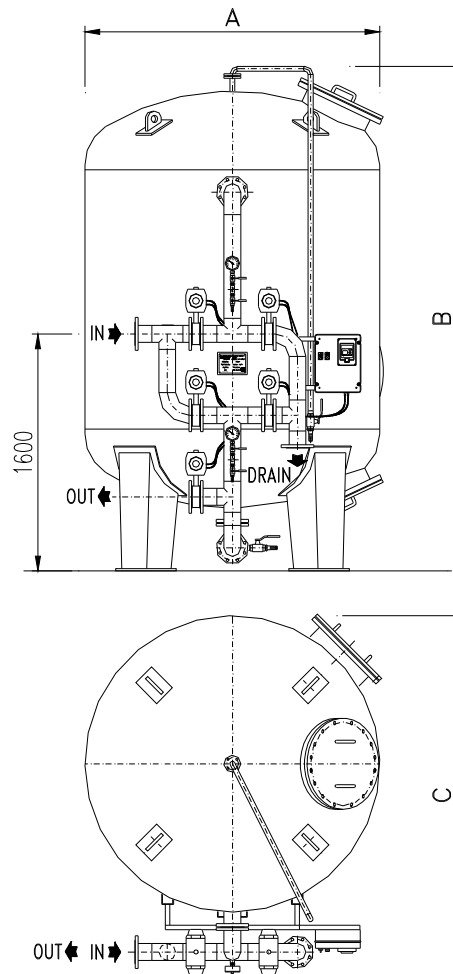
FAS 45 – 55⁽¹⁾



FAS 65 - 160



FAS 180 - 250



⁽¹⁾ **NOTE:** For FAS 45 and FAS 55 models, an upper manhole and flanging of the convex bottom below the plating are envisaged

TECHNICAL DATA

Model	Flow Rates			
	Operating			Back washing
	v = 15 m/h m ³ /h	v = 20 m/h m ³ /h	v = 25 m/h m ³ /h	
FAS 45	2.4	3.2	4.0	3.2
FAS 55	3.6	4.7	5.9	4.7
FAS 65	5.0	6.6	8.3	6.6
FAS 80	7.5	10.0	12.6	10.0
FAS 100	11.8	15.7	19.6	15.7
FAS 120	17.0	22.6	28.3	22.6
FAS 140	23.1	30.8	38.5	30.8
FAS 160	30.1	40.2	50.2	40.2
FAS 180	38.2	50.9	63.6	50.9
FAS 200	47.1	62.8	78.5	62.8
FAS 220	57.0	76.0	95.0	76.0
FAS 240	67.8	90.4	113.0	90.4
FAS 250	73.6	98.1	122.7	98.1

NB: - For constructional reasons dimensions and weights are not binding.
 - The company holds the right to modify the technical and aesthetic characteristics of each equipment

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in conformità alla EN ISO 9001 (2000)
