SAF Filters

The automatic self-cleaning filter - suitable for more applications than ever

- Large filter area, reliable operating mechanism and simple construction make the SAF filter the ideal solution for filtration of poor quality water to very fine filtration degrees
- Automatic flushing according to pressure differential and/or according to time
- No interruption of downstream flow during flushing
- Robust and reliable Self-Cleaning mechanism even on marginal operation conditions
- Minimal volume of reject water allows excellent operation in continuous flush mode
- Applications: Water supply systems, Irrigation systems, Cooling Water, Waste Water Treatment, Industrial Pre-Filtration, etc.
- Industries: manufacturing, mining, water and wastewater treatment plant, turf and agriculture, etc.

features:

<table>
<thead>
<tr>
<th>flowrates</th>
<th>filtration degrees</th>
<th>water for cleaning</th>
<th>minimum operating pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 400 m³/h</td>
<td>800-10 micron</td>
<td>less than 1% of the total flow</td>
<td>2 bar (30 psi)</td>
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<tr>
<td>(1760 US gpm)</td>
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</table>
How the SAF Filters work

General
The Amiad SAF Series are sophisticated, yet easy-to-operate, automatic filters, with a self-cleaning mechanism driven by an electric motor.
The “SAF” filters support flow-rates of up to 400 m³/h (1760 gpm), with various screens designed to cover a range of 800-10 micron filtration degree, and are available in inlet/outlet diameters of 2”-10”.

The Filtering Process
Raw water enters the filter inlet [1] through the coarse screen [2] which protects the cleaning mechanism from large debris. The water passes through the fine screen [3], trapping dirt particles which accumulate inside the filter. Clean water flows through the filter outlet [4].
The gradual dirt buildup on the inner screen surface causes a filter cake to develop, with a corresponding increase in the pressure differential across the screen. A pressure differential switch senses the increased pressure differential and when it reaches a pre-set value, the cleaning process begins.

The Self-Cleaning Process
Cleaning of the filter is carried out by the suction scanner [5] which spirals across the screen; the open exhaust valve creates a high velocity suction stream at the nozzles tip which “vacuums” the filter cake from the screen. During the self-cleaning process, which takes between 20 to 40 seconds, filtered water continues to flow downstream.

The Control System
Two types of control boards are available for the SAF filters: PLC or Electro-Mechanical Relay and Timer.
The self-cleaning cycle begins under any one of the following conditions:
1. Receiving a signal from the Pressure Differential Switch [6]
2. Time interval parameter set at the control board
3. Manual Start
The control board also provides:
Optional continuous flush operation mode
Flush cycles counter
Alarm or an alternative reaction at malfunction mode; open a bypass, shut-off a pump, etc.

“SAF” Models
Amiad’s “SAF” product-line consists of the following models:
SAF-1500 for up to 80 m³/h (350 gpm)
SAF-3000 for up to 150 m³/h (660 gpm)
SAF-4500 for up to 250 m³/h (1100 gpm)
SAF-6000 for up to 400 m³/h (1,760 gpm)
Typical Installation Drawing

Head Loss Graphs in clean water

Dim: mm (inch)
*Approx. length required for maintenance
## Technical Specifications

<table>
<thead>
<tr>
<th>Filter</th>
<th>SAF 1500</th>
<th>SAF 3000</th>
<th>SAF 4500</th>
<th>SAF 6000</th>
</tr>
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<tbody>
<tr>
<td><strong>General Data</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Maximum flowrate*</td>
<td>80 m³/h</td>
<td>150 m³/h</td>
<td>250 m³/h</td>
<td>400 m³/h</td>
</tr>
<tr>
<td>Inlet/Outlet diameter [mm]</td>
<td>2” 3” 4” (50 80 100)</td>
<td>3” 4” 6” (80 100 150)</td>
<td>4” 6” 8” (100 150 200)</td>
<td>6” 8” 10” (150 200 250)</td>
</tr>
<tr>
<td>Standard filtration degrees</td>
<td>Weave Wire Screen 800, 300, 200, 130, 100, 80, 50, 25, 10 micron</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min. working pressure</td>
<td>2 bar (30 psi)</td>
<td>For lower pressure please consult manufacturer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. working pressure</td>
<td>10 bar (150 psi)</td>
<td>16 bar (232 psi) upon request</td>
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<tr>
<td>Max. working pressure</td>
<td>50°C (122°F)</td>
<td>60°C (140°F)</td>
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<tr>
<td>Max. working pressure</td>
<td>95°C (203°F) upon request</td>
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<td>95°C (203°F) upon request</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Electrical Supply</td>
<td>3 phase, 220/380/440 VAC 50/60 Hz</td>
<td></td>
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</tr>
<tr>
<td>Weight [empty]</td>
<td>86 kg (190 lb)</td>
<td>110 kg (242.5 lb)</td>
<td>160 kg (353 lb)</td>
<td>250 kg (551 lb)</td>
</tr>
<tr>
<td>* Consult Amiad for optimum flow depending on filtration degree &amp; water quality.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Flushing Data</th>
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</thead>
<tbody>
<tr>
<td>Minimum flow for flushing</td>
<td>6 m³/h (26 US gpm)</td>
<td>11 m³/h (48 US gpm)</td>
<td>15 m³/h (66 US gpm)</td>
<td>25 m³/h (110 US gpm)</td>
</tr>
<tr>
<td>Reject water volume per flush cycle (at 2 bar -30 psi)</td>
<td>25 liter (7 US gallon)</td>
<td>64 liter (17 US gallon)</td>
<td>83 liter (22 US gallon)</td>
<td>280 liter (74 US gallon)</td>
</tr>
<tr>
<td>Flushing cycle time</td>
<td>15 seconds</td>
<td>20 seconds</td>
<td>20 seconds</td>
<td>40 seconds</td>
</tr>
<tr>
<td>Exhaust valve</td>
<td>2” (50 mm)</td>
<td>2” (50 mm)</td>
<td>2” (50 mm)</td>
<td>2” (50 mm)</td>
</tr>
<tr>
<td>Flushing criteria</td>
<td>Differential pressure of 0.5 bar (7psi), time intervals and manual operation</td>
<td></td>
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<table>
<thead>
<tr>
<th>Screen Data</th>
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</thead>
<tbody>
<tr>
<td>Filter area</td>
<td>1500 cm² (323 in²)</td>
<td>3000 cm² (465 in²)</td>
<td>4500 cm² (697 in²)</td>
<td>6000 cm² (930 in²)</td>
</tr>
<tr>
<td>Screen types</td>
<td>Four-layer Weave Wire stainless steel 316L</td>
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<tr>
<td>Molded Weave Wire stainless steel 316L</td>
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<thead>
<tr>
<th>Control and Electricity</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Rated operation voltage</td>
<td>3phase, 220/380/440 VAC 50/60 Hz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric motor</td>
<td>¼ HP</td>
<td>¼ HP</td>
<td>¼ HP</td>
<td>¼ HP</td>
</tr>
<tr>
<td>Current consumption</td>
<td>0.6 Amp</td>
<td>0.6 Amp</td>
<td>0.6 Amp</td>
<td>0.8 Amp</td>
</tr>
<tr>
<td>Control voltage</td>
<td>24 VAC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(12 V or 24 VDC upon request)</td>
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</table>

<table>
<thead>
<tr>
<th>*Construction Materials</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Filter housing</td>
<td>Epoxy-coated carbon steel 37-2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter lid</td>
<td>SMC Polyester/Epoxy-coated carbon steel 37-2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleaning mechanism</td>
<td>Stainless steel 316L, Acetal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exhaust valve</td>
<td>Epoxy-coated cast iron, Natural rubber</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seals</td>
<td>Synthetic rubber, Teflon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>Aluminum, Brass, Stainless steel, PVC, Nylon</td>
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</tr>
</tbody>
</table>

*A Amiad offers a variety of construction materials. Consult us for specifications.*
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Control and Electricity

General Data

* Consult Amiad for optimum flow depending on filtration degree & water quality.

Filter SAF 1500 SAF 3000 SAF 4500 SAF 6000

(at 2 bar -30 psi)

Minimum flow for flushing

Flushing Data

Control voltage 24 VAC

Exhaust valve 2"

Weight [empty] 86 kg

Electrical Supply 3 phase, 220 / 380 / 440 VAC 50 / 60 Hz

Maximum flowrate* 80 m³/h

Control Aluminum, Brass, Stainless steel, PVC, Nylon

Seals Synthetic rubber, Teflon

Exhaust valve Epoxy-coated cast iron, Natural rubber

Cleaning mechanism Stainless steel 316L, Acetal

Filter lid SMC Polyester / Epoxy-coated carbon steel 37-2

*Construction Materials

Current consumption 0.6 Amp 0.6 Amp 0.6 Amp 0.8 Amp

Electric motor ¼ HP ¼ HP ¼ HP 1/3 HP

Rated operation voltage 3phase, 220/380/440 VAC 50/60 Hz

Flushing cycle time 15 seconds 20 seconds 20 seconds 40 seconds
cycle (at 2 bar -30 psi)

Reject water volume per flush

Filter area 1500 cm²

Screen Data

Flushing criteria Differential pressure of 0.5 bar (7psi), time intervals and manual operation

Max. working pressure 10 bar (150 psi) 10 bar ( 150 psi)

Min. working pressure 2 bar (30 psi)

Standard filtration degrees Weave Wire Screen 800, 500, 300, 200, 130, 100, 80, 50, 25, 10 micron

Inlet/Outlet diameter (mm) 2" 3" 4"

Max. working temperature 50°C (122°F) 50°C (122°F) 60°C (140°F)

For lower pressure please consult manufacturer

Four-layer Weave Wire stainless steel 316L

Molded Weave Wire stainless steel 316L

(17 US gallon)

(660 US gpm)

(48 US gpm)

(80 100 150)

(66 US gpm)

(100 150 200)

(110 150 200)

(150 200 250)

3000 cm²

4500 cm²

6000 cm²

50 mm

323 in²

190 lb

6 m³/h

6 m³/h

150 m³/h

26 US gpm

48 US gpm

110 US gpm

3" 4" 6"

64 liter

465 in²

242.5 lb

110 kg

25 m³/h

250 kg

160 kg

16 bar (232 psi) upon request

95°C (203°F) upon request

(1760 US gpm)

(74 US gallon)

(110 US gpm)

(150 200 250)

60°C (140°F)

60°C (140°F)

95°C (203°F)

(1100 US gpm)

(74 US gallon)

(110 US gpm)

(150 200 250)

60°C (140°F)

95°C (203°F)

(1100 US gpm)

(74 US gallon)

(110 US gpm)

(150 200 250)