

EBS Filters

Robust and efficient automatic self-cleaning filter for fine filtration



flow rates

**up to 7200 m³/h
(32000 gpm)**

filtration degrees

**800-10
micron**

water for cleaning

**less than 1%
of the total flow**

minimum operating
pressure

**2 bar
(30 psi)**

features:

- Large filtration area, reliable operating mechanism and simple construction make the EBS filter the ideal solution for filtration of high-flow and poor quality water to very fine filtration degrees
- Automatic flushing according to pressure differential and/or time
- No interruption of downstream flow during flushing
- Reliable self-cleaning mechanism even in extreme operation conditions
- Minimal volume of reject water allows excellent operation during flush mode
- Applications: water supply systems, irrigation systems, cooling water, wastewater treatment, industrial pre-filtration, etc.
- Industries: manufacturing, mining, water and wastewater treatment plants, turf and agriculture, etc.

How the EBS Filters Work

General

The Amiad EBS Series are automatic filters, with an electric self-cleaning mechanism.

The “EBS” filters range in flowrates of up to 7200 m³/h (32000 gpm), with screens designed ranging from 800-10 micron filtration degree. Inlet/Outlet flanges are available from 8” -36” diameter.

The Filtering Process

Raw water enters from the filter inlet (1) and passes through the screen (2). Clean water flows through the filter outlet (3). 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 (4) senses the 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 nozzle tip which “vacuums” the filter cake from the screen. During the self-cleaning process, which takes approximately 30 seconds, filtered water continues to flow downstream.

The Control System

The “EBS” operation and cleaning cycle is controlled and monitored by a Programmable Logic Control (PLC). The PLC allows maximum flexibility in control options and has many features that can be incorporated per customer’s needs. During the self-cleaning cycle the PLC controls a solenoid that operates the exhaust valve by means of a hydraulic command or compressed air.

The self-cleaning cycle begins under any one of the following conditions:

1. Receiving a signal from the Pressure Differential Switch
2. Time interval parameter set at the control board
3. Manual Start

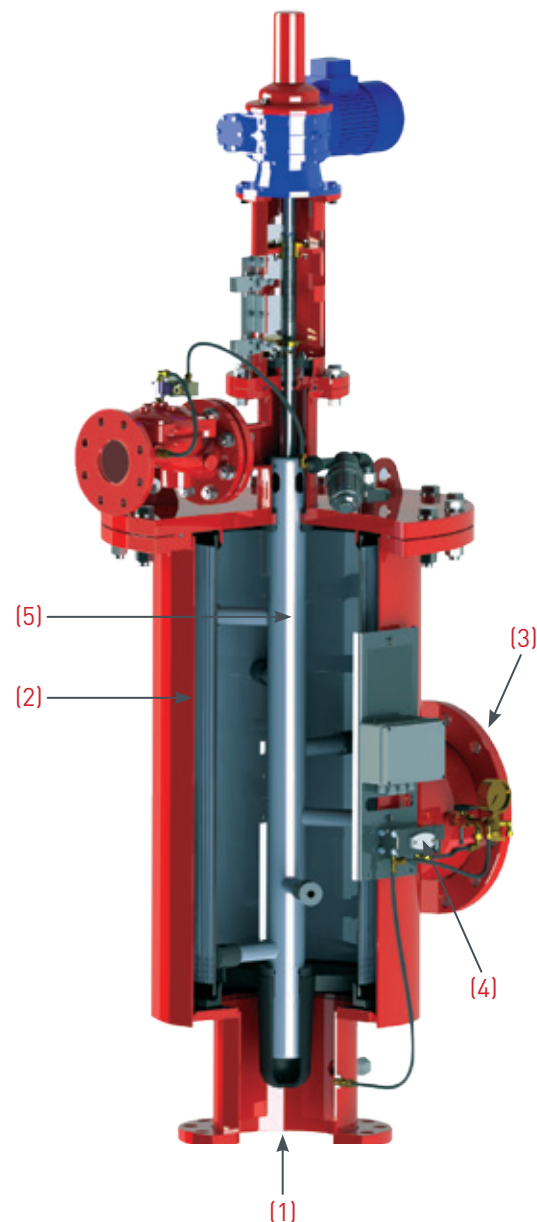
The control board also provides:

- Optional continuous flush mode
- Flush cycles counter
- Alarm output – may be used to open a bypass, shut-off a pump, etc.

“EBS” Models

Amiad’s “EBS” product-line consists of the following models:

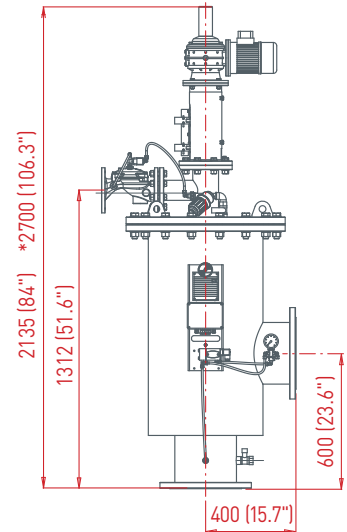
- EBS 10000 for up to 1200 m³/h (5300 gpm)
- EBS 15000 for up to 1800 m³/h (8000 gpm)
- Mega EBS 40000 which consists of four EBS-10000 screen elements for up to 4800 m³/h (21100 gpm)
- Mega EBS 60000 which consists of four EBS-15000 screen elements for up to 7200 m³/h (32000 gpm)



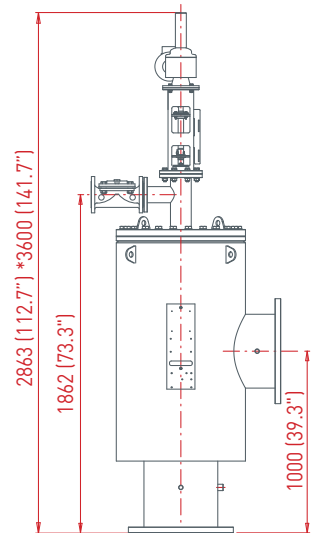
EBS 10000



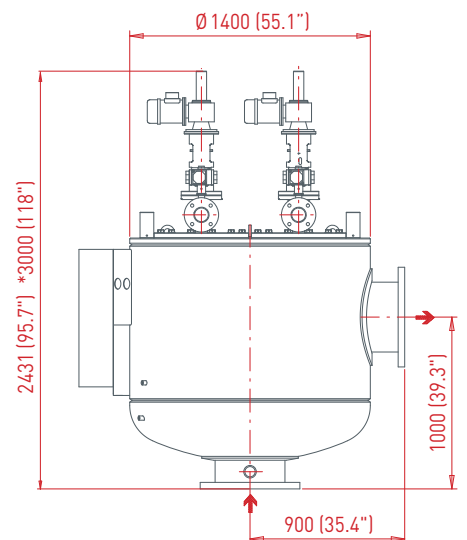
ON-LINE



EBS 15000



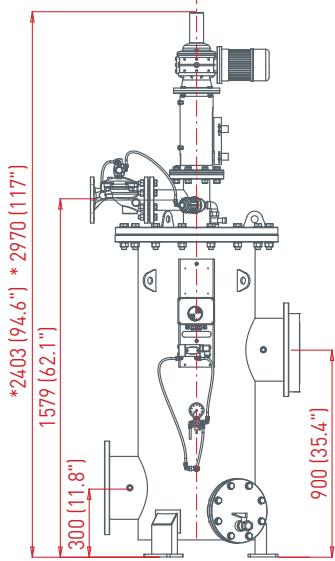
Mega EBS 40000



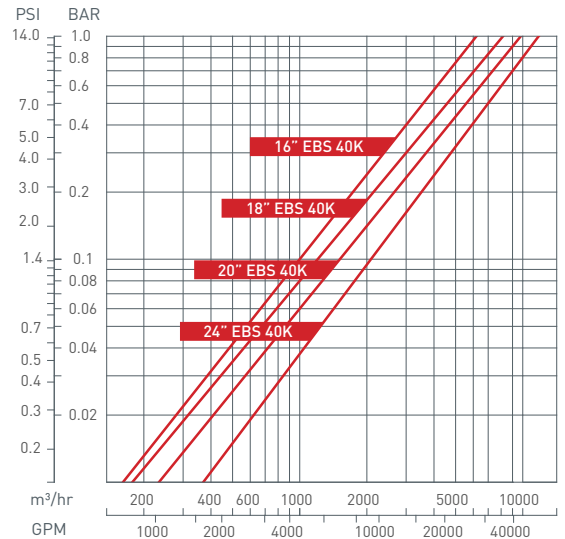
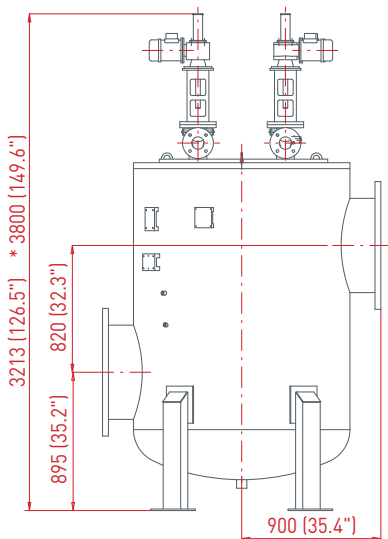
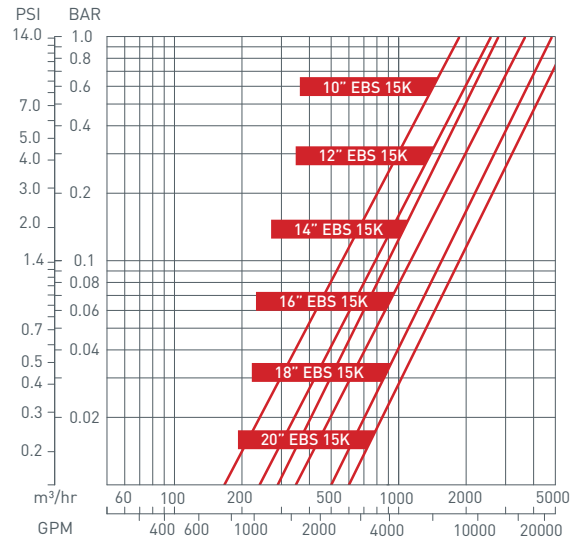
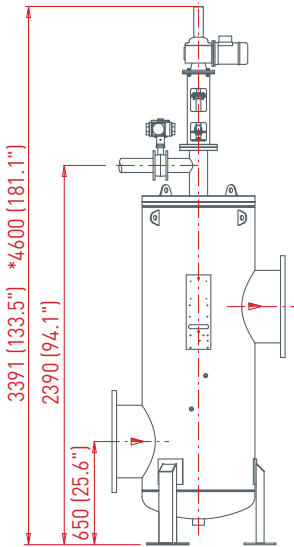
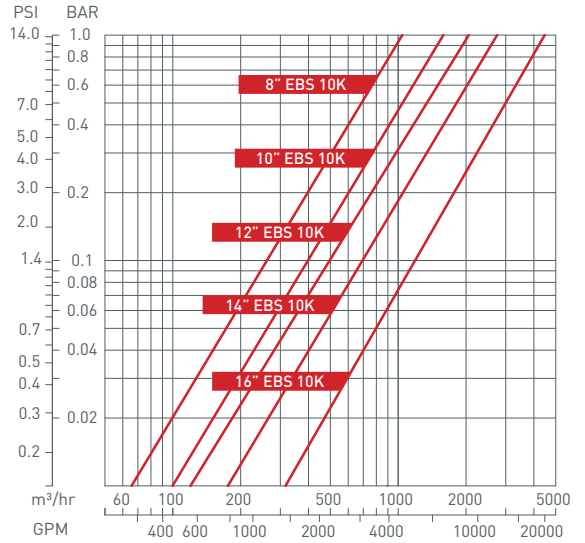
Dim: mm (inch)

*Approx. length required for maintenance

IN-LINE



Head Loss Graphs in clean water



Dim: mm (inch)

*Approx. length required for maintenance

Technical Specifications

Filter Type	EBS 10000	EBS 15000	Mega EBS 40000	Mega EBS 60000
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General Data				
Maximum flow rate*	1200 m ³ /h (5300 gpm)	1800 m ³ /h (8000 gpm)	4800 m ³ /h (21100 gpm)	7200 m ³ /h (32000 gpm)
Inlet/Outlet diameter	8"-16" (200-400 mm)	10"-20" (250-500 mm)	16"-24" (400-600 mm)	20"-36" (500-900 mm)
Standard filtration degrees	Weave Wire Screen 800, 500, 300, 200, 130, 100, 80, 50, 40, 30, 25, 10 micron			
Min. working pressure	2 bar (30 psi)			
Max. working pressure	10 bar (150 psi) 16 bar (232 psi) upon request			
Max. working temperature	60°C (140°F)			
Electrical supply	3 phase, 220/380/440 VAC 50/60 Hz			
Weight [empty on-line models]	451 kg (992 lb)	536 kg (1179 lb)	2250 kg (4960 lb)	6200 kg (13670 lb)

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

Flushing Data				
Minimum flow for flushing (at 2 bar - 30 psi)	50 m ³ /h (220 gpm)		50 or 200 m ³ /h* (220 or 880 gpm)*	
Reject water volume per flush cycle	420 liter (111 gallon)	500 liter (132 gallon)	1680 liter (444 gallon)	2000 liter (528 gallon)
Flushing cycle time	30 seconds	36 seconds	30 or 120 seconds*	36 or 144 seconds*
Exhaust valve	3" (80 mm)		4 units of 3" (4 units of 80 mm)	
Flushing criteria	Differential pressure of 0.5 bar (7 psi), time intervals and manual operation			

*One-by-one or all four screens simultaneously.

Screen Data				
Filter area	10000 cm ² (1500 in ²)	15000 cm ² (2325 in ²)	40000 cm ² (6200 in ²)	60000 cm ² (9300 in ²)
Screen type	Four-layer weave wire stainless steel 316L			

Control and Electricity				
Rated operation voltage	3 phase, 220/380/440 VAC 50/60 Hz			
Electric motor 20/24 Gear output RPM	½ HP		4 x ½ HP	
Current consumption	1.5 Amp		5 Amp	
Control voltage	24 VAC			

Construction Materials*				
Filter housing and lid	Carbon steel Phenolic epoxy coated			
Cleaning mechanism	Stainless steel 316L, acetal			
Exhaust valve	Epoxy-coated cast iron, natural rubber			
Seals	Synthetic rubber, teflon			
Control	Aluminum, brass, stainless steel, PVC, nylon			

* Amiad offers a variety of construction materials and screens. Please consult us for specifications.

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