amiad® WATER SYSTEMS | AMIAD

NEW

Sigma Series

Multi-screen polymeric, self-cleaning filter combining Amiad's suction-scanning screen technology with an innovative compact design

	4"	6"	8"
flowrate	30-120 m³/h (132-528 gpm)	50-180 m³/h (220-792 gpm)	50-280 m³/h (220-1,233 gpm)
inlet/outlet diameter	100 mm (4")	150 mm (6")	200 mm (8")
filtration degrees	80-300 micron		
min. operating pressure during flush cycle	1.5 bar/22 psi (electrical controller) 2.2 bar/32 psi (hydraulic controller)		
max. working pressure	10 bar (145 psi)		

Highlights:

- Increased reliability and durability
- Suction-scanning screen technology
- Large filtration area
- Polymeric housing - Corrosion and fertilizer resistant
- Low water and energy consumption
- Compact design and small footprint
- Easy installation and maintenance
- Diverse open-field irrigation, landscaping, greenhouse and aquaculture applications
- AC/DC electronic controller (optional)

*** Patent pending**

How the Sigma Filter Works

General

The Amiad Sigma Filters are automatic filters, with multiple screens operated by a single hydraulic turbine mechanism, with a capacity up to 280 m^3/h (1,232 gpm) and from 80-300 micron filtration degree. Inlet/Outlet connections available: 100 mm (4"), 150 mm (6"), 200 mm (8") diameter, and exhaust valve is 50 mm (2").

The Filtration Process

Raw water enters from the filter inlet and passes through the multi-screens. Clean water flows through the filter outlet. The gradual dirt buildup on the screen inner surface causes a filter cake to develop, with a corresponding increase in the pressure differential across the multi-screens. A pressure differential switch (hydraulic or electric) senses the pressure differential and when it reaches a pre-set value, the self-cleaning process begins.

The Control System

The Sigma operation and cleaning cycle is controlled and monitored by a hydraulic rinse control or an electronic battery/AC controller.
During the self-cleaning cycle the rinse control operates the exhaust valve by means of an hydraulic command, and when the cycle is complete, it automatically closes the exhaust valve and waits for the next cycle. In the case of the electronic controller, the self-cleaning cycle is triggered by the DP switch, then the AC or DC controller switches the solenoid to open or close the exhaust valve by means of a hydraulic command; When cycle is complete, the controller will shut the exhaust valve and wait for another cleaning command.

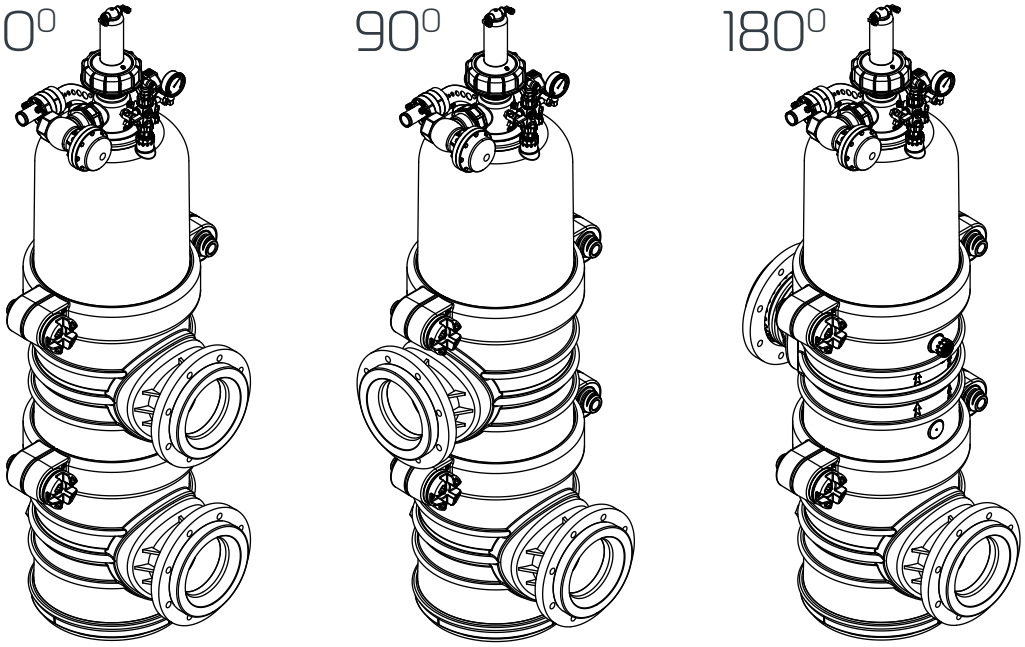
The self-cleaning cycle begins under any one of the following conditions:
1. Receiving a signal from the Pressure Differential Device - which is preset at 0.5 bar (7 psi).
2. Time interval parameter set at the controller (electronic controller only).
3. Manual Start, triggered by 3 way ball valve or via electronic controller keypad.

The electronic controller also provides:
- Flush cycles counter
- Alerts output – low battery, DP cycle

Sigma models

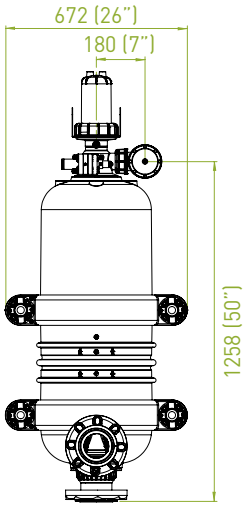
Amiad's Sigma Series consists of the following models:
- Sigma 4" - for up-to 120 m^3/h (528 gpm)
- Sigma 6" - for up-to 180 m^3/h (792 gpm)
- Sigma 8" - for up-to 280 m^3/h (1,233 gpm)

Unique Inlet-Outlet Configurations

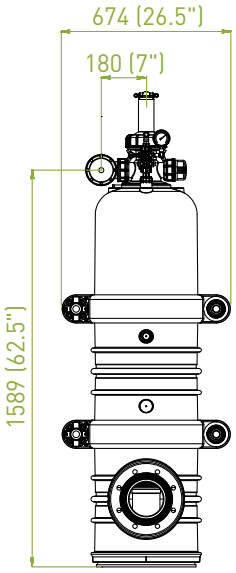


Sigma 4”

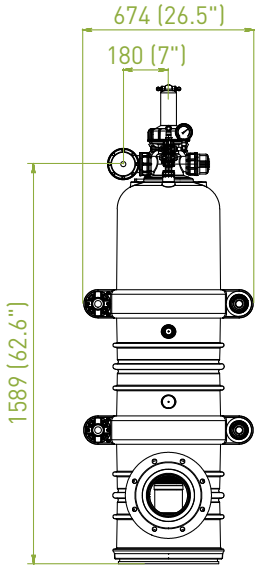
Dim: in mm (inch)



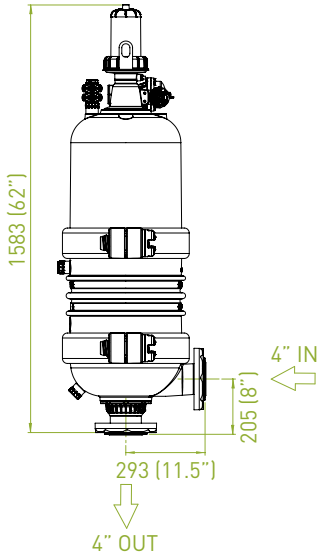
Sigma 6”



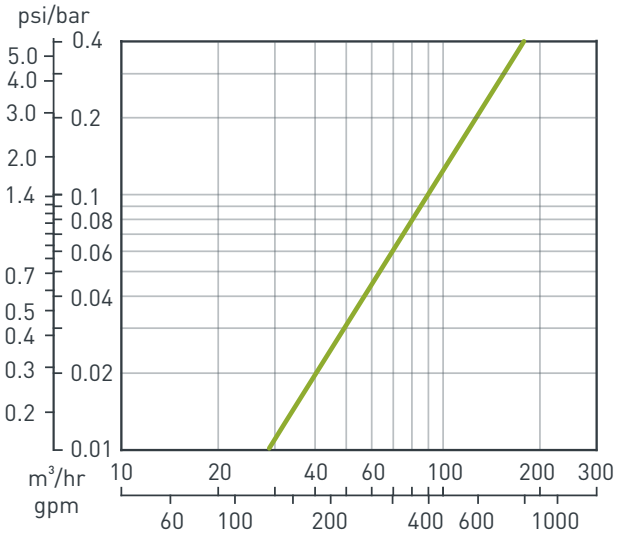
Sigma 8”

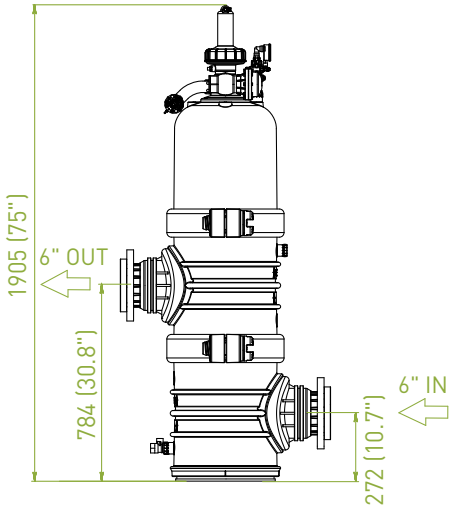


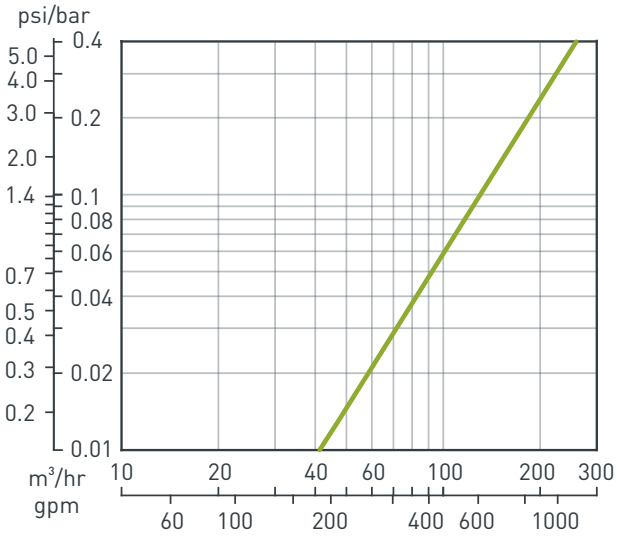
Dim: in mm (inch)

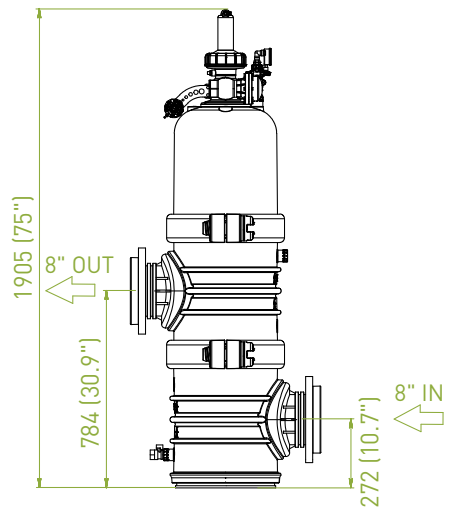


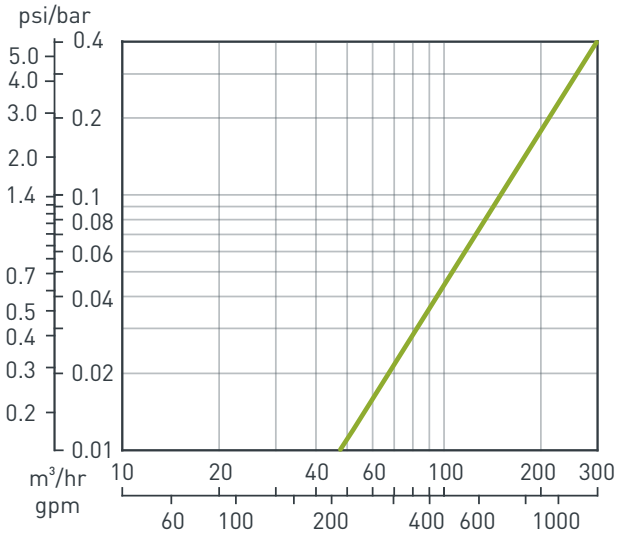
Head Loss Graph
(in clean water)



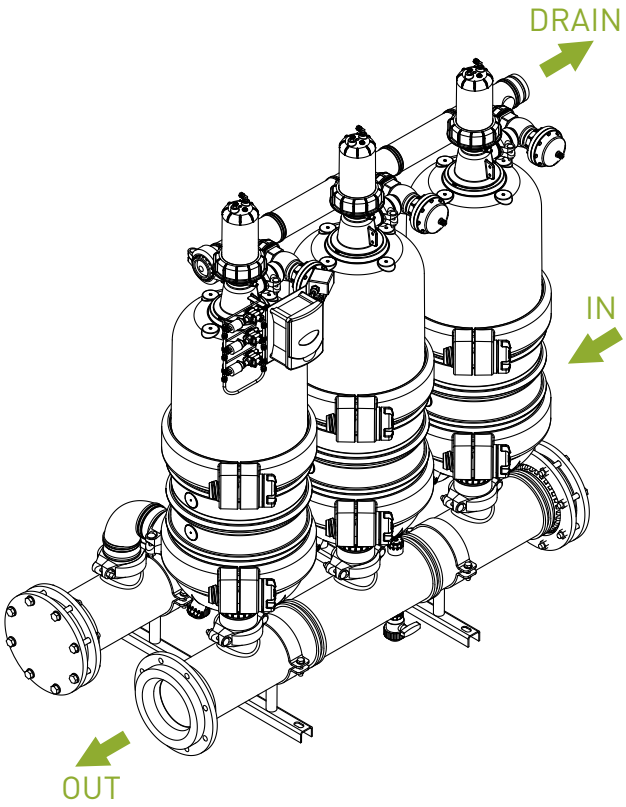




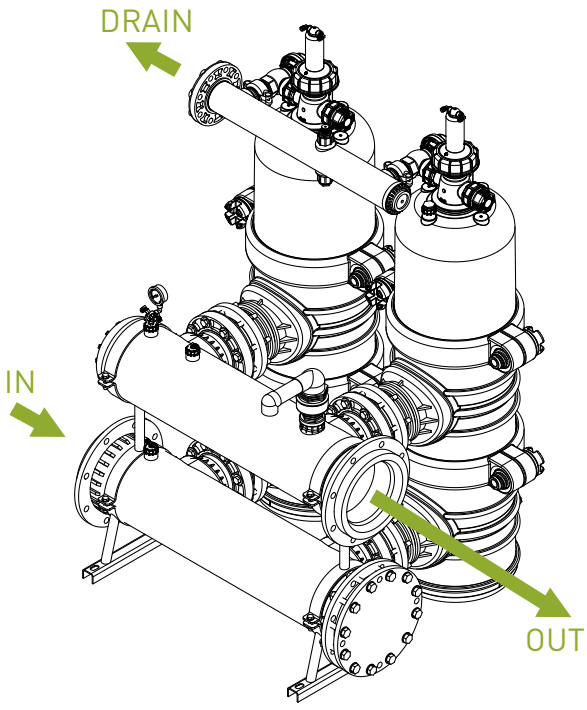




Sigma 4” installation of 3 units with manifold, flow up to 360 m³/h (1,584 gpm)



Sigma 6” installation of 2 units with manifold, flow up to 360 m³/h (1,584 gpm)



Technical Specifications

General data	Sigma 4"	Sigma 6"	Sigma 8"
Max. flowrate* (100µ) in average water quality	120 m^3/h (528 gpm)	180 m^3/h (792 gpm)	280 m^3/h (1,233 gpm)
Min. operating pressure when cleaning	1.5 bar (22 psi) - Electrical controller 2.2 bar (32 psi) - Hydraulic Controller		
Max. operating pressure	10 bar (145 psi)		
Filtration area	6,000 cm^2 (930 in^2)	8,000 cm^2 (1240 in^2)	8,000 cm^2 (1240 in^2)
Inlet/Outlet diameter	4" (100 mm) Flange & Victaulic	6" (150 mm)	8" (200 mm)
Weight	Empty: 75 kg (110 lb) Full: 145 kg (213 lb)	Empty: 110 kg (242 lb) Full: 225 kg (496 lb)	Empty: 120 kg (264 lb) Full: 235 kg (518.3 lb)

* Amiad's flow recommendation per water quality.

Hydraulic control	
Rinse control	PP (Polypropylene), PA (Polyamide)
DP switch	Built-in rinse controller set at 0.5 bar (7 psi)
Operation mode	3 way ball valve, indicate: Automatic & Manual

Optional electronic control	
Control voltage	6 VDC or 24 VAC
Control power supply	4 D type 1.5V batteries/AC power
Solenoid operation data	12-9 VDC latching solenoid or 24VAC solenoid
DP switch	Dry contact switch

Flushing data		
Exhaust valve	2" (50 mm)	
Flushing time	20 sec	10 sec at 1.5 bar (22 psi)
Reject water volume per flush cycle	approx. 150-200 liters (40-53 gallons)	90 liters (50 gallons)

Construction materials	
Filter housing & lid	RPP (Reinforced Polypropylene) RPA (Reinforced Polyamide)
Screens	Molded Weave wire 316L, screen mesh
Cleaning mechanism	PBT (Polybutylene)
Exhaust valve	Polymeric actuator
Seals	EPDM
Control command tubing	PE (Polyethylene)

Standard Filtration Degrees					
micron	300	200	130	100	80
mm	0.3	0.2	0.13	0.1	0.08

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