



# MINISIGMA

Durable polymeric  
self-cleaning screen filter

# MASTERS OF FILTRATION



Any Crop



Anywhere



Any Water Source



Any Technology

**Farming is our heritage.**  
**Filtration is our legacy.**

At Amiad, our roots are in the land. As farmers, we learned at firsthand what our crops need to thrive. We understand that every water source is different, and how water quality can greatly affect crop yield.

The filter is the first vital link in the irrigation chain. It's there to protect irrigation systems from damage, while delivering the best quality water.

We develop filters that are able to cope with any water quality, in any geographical location.

We've spent years mastering filtration technology so we can offer a wide range of filters for every farmer's needs including screen, disc or media technology. Our fully automated filtration systems save time, manpower and costs.

We consider every challenge as an opportunity to work side by side with our customers to solve their problems. We'll go anywhere to ensure our filters perform as expected, 24/7, every day of the year.

When you want a high performance filter for your irrigation system, consult with Amiad. We focus on doing what we do best.

**Amiad. Masters of Filtration.**



Disc Technology



Screen Technology



Media Technology

# The next generation of water filtration

## MINISIGMA FEATURES



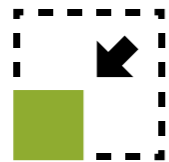
Easy installation and low maintenance



Reliable and durable



Low water and energy consumption



Compact design and small footprint



Registered Patent



Ideal for many landscape and agricultural irrigation applications



Polymeric filter - corrosion free

## Success Story

### The Challenge

Irrigating plantations with secondary treated wastewater carries a high risk of emitter clogging, because the wastewater has high levels of suspended particles, metal, salt, ions and biological contaminants. Initially, the plantation owners installed semi-automatic screen filters on each secondary head control. However, they had to constantly work at cleaning the filters to prevent clogging.

### The Solution

In order to save time, money and manpower, they replaced their semi-automatic filters with Mini Sigma automatic self-cleaning filters, which don't require manual flushing, need very little maintenance, and have an efficient self-cleaning mechanism.

### The Results

**Time savings** — the filtration process continues uninterrupted during the cleaning cycle; no need to shut down the irrigation system.

**Manpower savings** — the plantation owners saved an estimated \$1,000 per month on manpower and the workers were reassigned to other tasks.

**Water savings** — a precise amount of water is used for each cleaning cycle which minimizes water waste.



**Banana Plantation**  
Kibbutz Ginosar, Israel

Total Size:  
13 hectares divided  
into 16 plots



### Irrigation System

Drip irrigation.  
16 secondary head controls,  
one for each plot



### Water Source

Secondary treated  
wastewater



### Original Filtration System

Semi-automatic  
screen filters



Since we installed the new system supplied by Amiad, we've noticed a great improvement in the efficiency of the irrigation system.

Remi Lufan

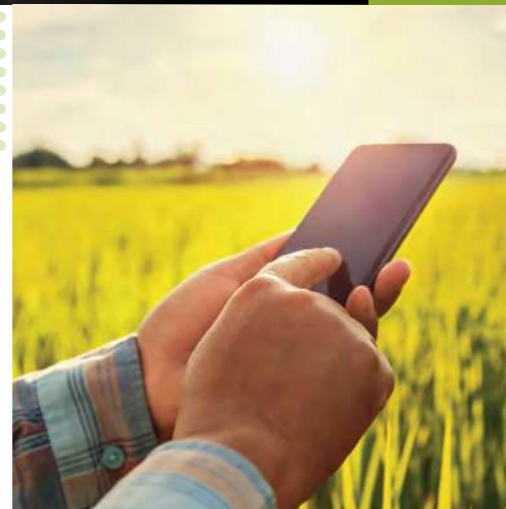


# ADI-P: the control is in your hands



## The ADI-P Controller

The ADI-P Controller operates the automated processes that flush your Mini Sigma filters, allowing you to control and monitor them easily and conveniently.



## The ADI-P App

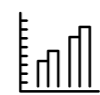
Access your site's filtration performance data directly from the ADI-P app. Here are some of the data that you can access via the ADI-P app:



Suitable for low pressure (1.5-10 bar)



Single or dual solenoid configuration



Provides detailed filtration performance data



Communication within **Bluetooth®** technology range



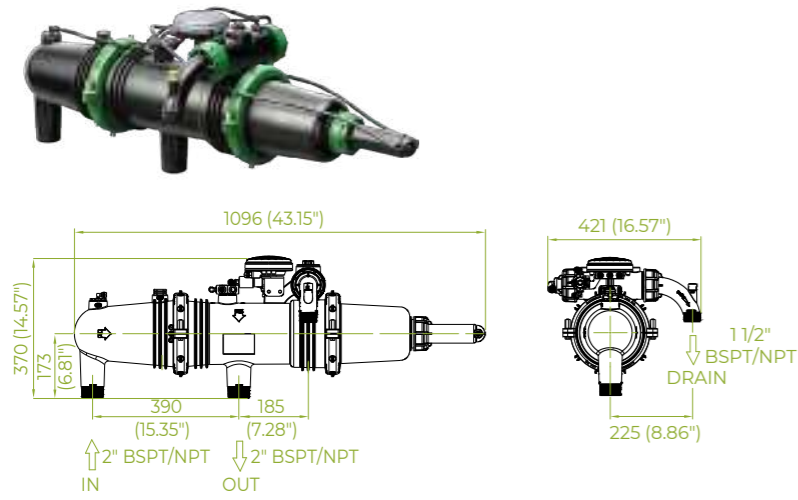
Offline information storage available

- Flush logs
- Flush frequency
- Current DP
- Current outlet and inlet pressure

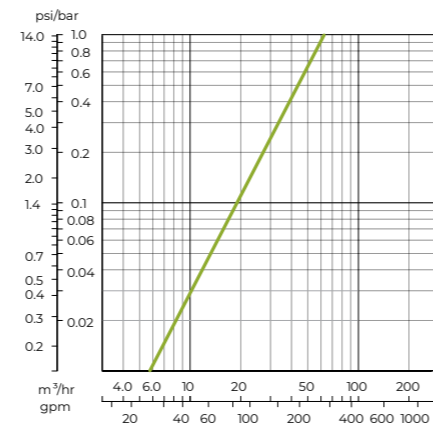
- Flush quality - measuring DP on the filter before and after flush cycle
- Malfunctions with descriptions of each event
- Battery status and low battery alerts

# MINISIGMA Models

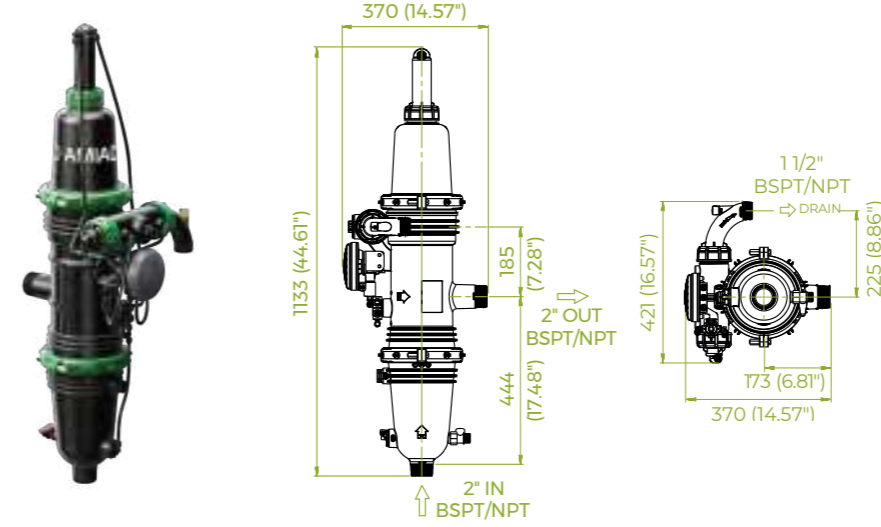
## 2" MINISIGMA | on-line



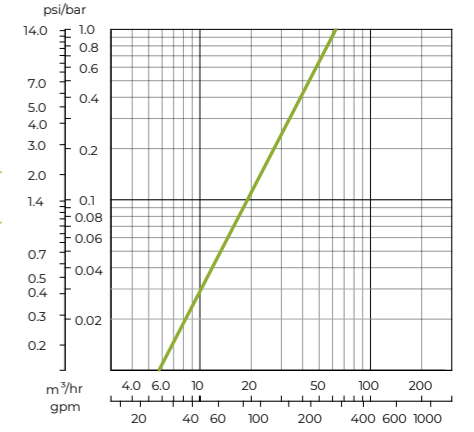
Head Loss Graph (in clean water)



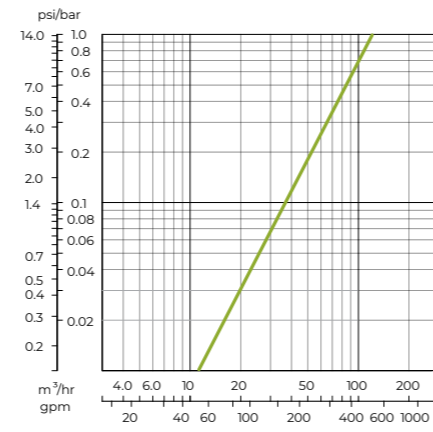
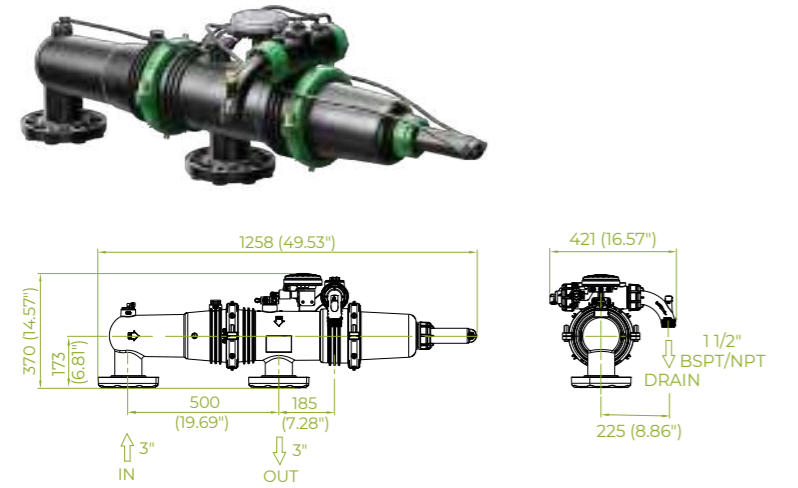
## 2" MINISIGMA | angle



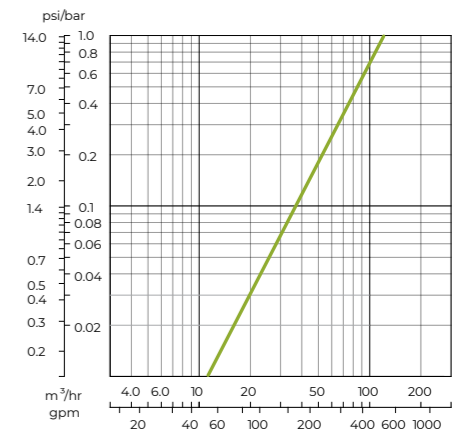
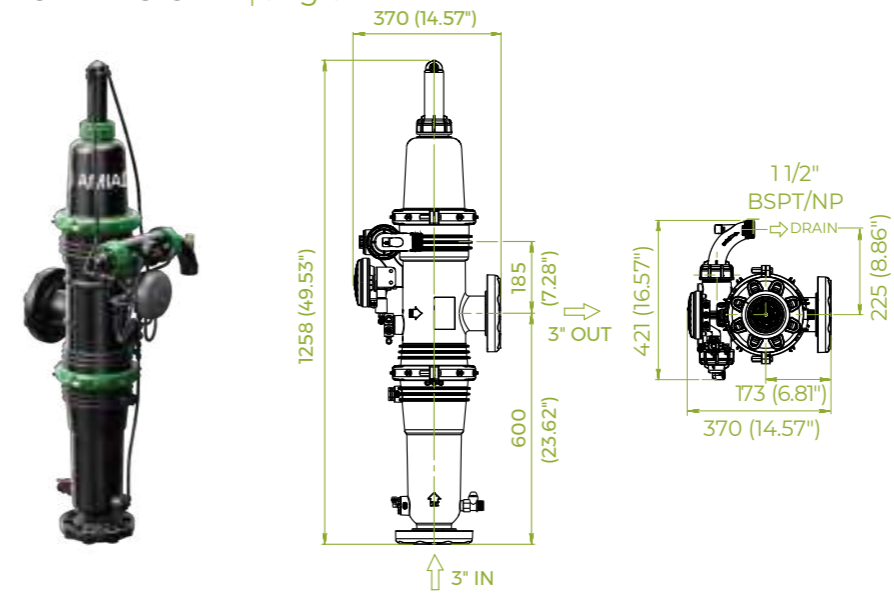
Head Loss Graph (in clean water)



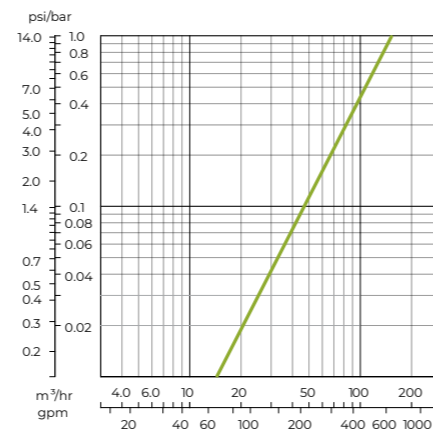
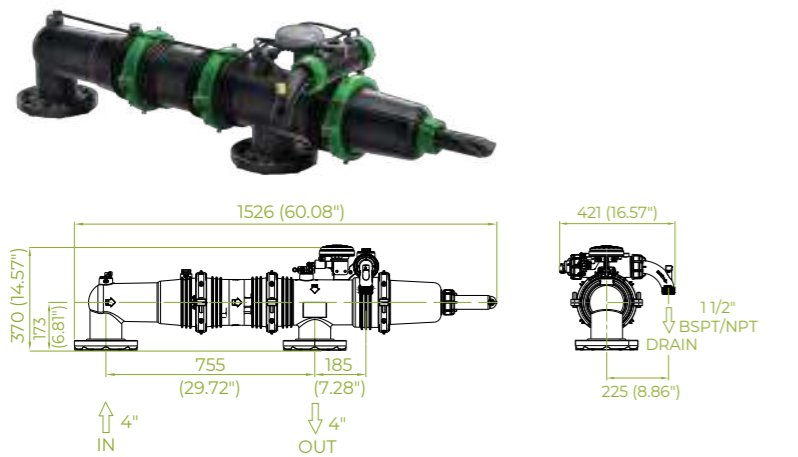
## 3" MINISIGMA | on-line



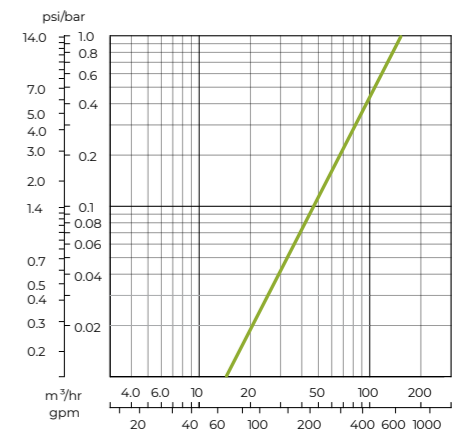
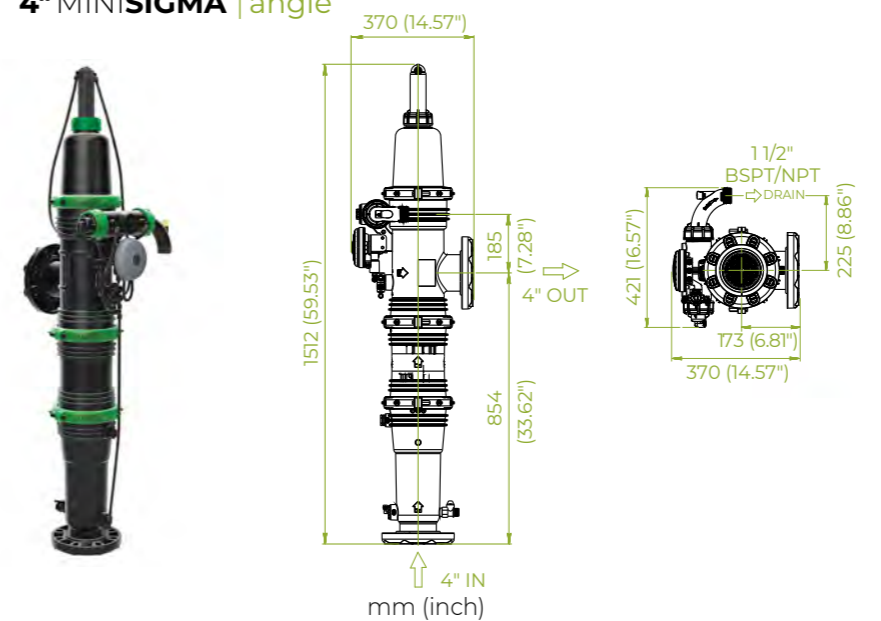
## 3" MINISIGMA | angle



## 4" MINISIGMA | on-line



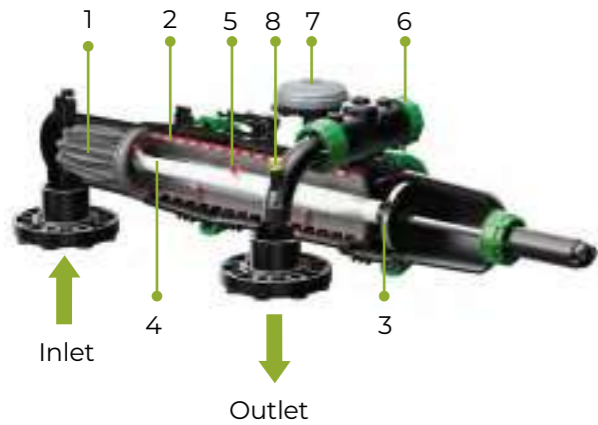
## 4" MINISIGMA | angle



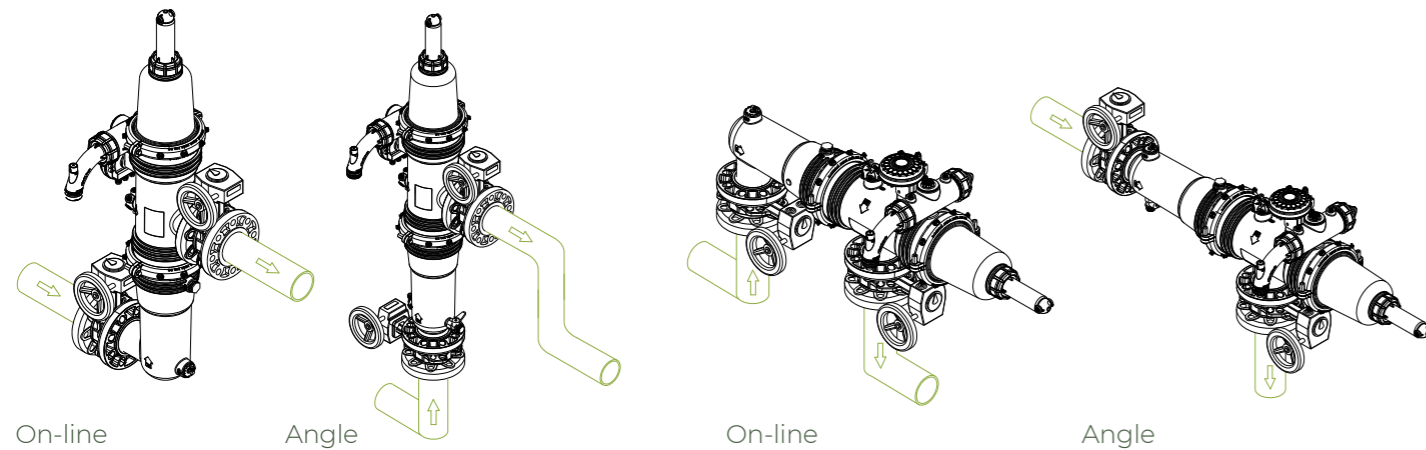
# MINISIGMA: a step ahead

## Mini Sigma Parts

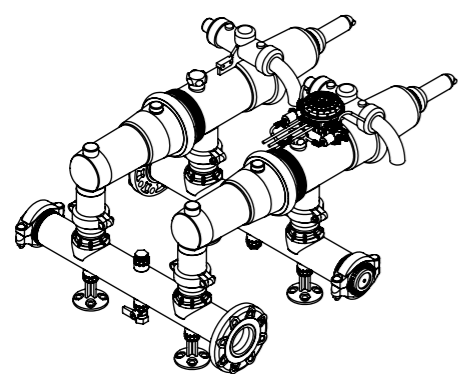
1. Coarse screen
2. Fine screen
3. Hydraulic turbine
4. Suction-scanner shaft
5. Suction-scanner nozzles
6. Flush valve
7. ADI-P controller
8. Integral anti vacuum



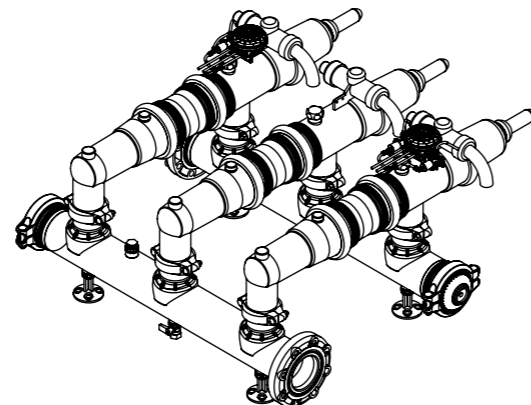
## Installation Configurations



## Battery Design



2 units of 3" Mini Sigma  
for flow rates up to 100 m<sup>3</sup>/h (440 gpm)



3 units of 4" Mini Sigma  
for flow rates up to 240 m<sup>3</sup>/h (1,057 gpm)

## Technical Specifications

Filter Model	2" Mini Sigma	3" Mini Sigma	4" Mini Sigma
<b>General data</b>			
Max. flow rate* (130µ)	30 m <sup>3</sup> /h (132 gpm)	50 m <sup>3</sup> /h (220 gpm)	80 m <sup>3</sup> /h (352 gpm)
Min. operating pressure when cleaning	1.5 bar (22 psi)		
Max. operating pressure	8 bar (116 psi)		
Filtration area	1,200 cm <sup>2</sup> (186 in <sup>2</sup> )	1,600 cm <sup>2</sup> (248 in <sup>2</sup> )	2,400 cm <sup>2</sup> (372 in <sup>2</sup> )
Inlet/Outlet diameter	2" (50 mm) BSPT/NPT	3" (80 mm) Grooved coupling/ Universal flange	4" (100 mm) Grooved coupling/ Universal flange
Weight (Empty)	16 kg (35 lb)	20 kg (44 lb)	23 kg (51 lb)

\* Amiad's flow recommendation per water quality.

### Electronic control

Control power supply	4 x AA type 1.5V batteries and/or External 7-14 VDC
Solenoid	9-12 VDC latching solenoid
DP switch	Integral sensors

### Flushing data (at 1.5 bar, 22 psi)

Exhaust valve	1.5" (40 mm) BSPT/NPT		
Flushing time*	10 seconds		
Reject water volume per flush cycle*	24 liters (6.3 gallons)	26 liters (6.8 gallons)	28 liters (7.4 gallons)
Flushing flow rate*	8.7 m <sup>3</sup> /h (38.3 gpm)	9.6 m <sup>3</sup> /h (42.2 gpm)	10 m <sup>3</sup> /h (44 gpm)

\* Any pressure between 1.5 bar (22 psi) and 8 bar (116 psi) will improve these parameters.

### Construction materials

Filter housing and lid	RPA (reinforced polyamide)
Screens	Molded weavewire, stainless steel 316L
Cleaning mechanism	PBT
Exhaust valve	Polymeric
Seals	EPDM, NBR
Control command tubing	PE (polyethylene)

### Standard Filtration Degrees

micron	500	300	200	130	100	80	50
mm	0.5	0.3	0.2	0.13	0.1	0.08	0.05



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 **amiad** IRRIGATION

# MASTERS OF FILTRATION

[www.amiad.com](http://www.amiad.com)

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