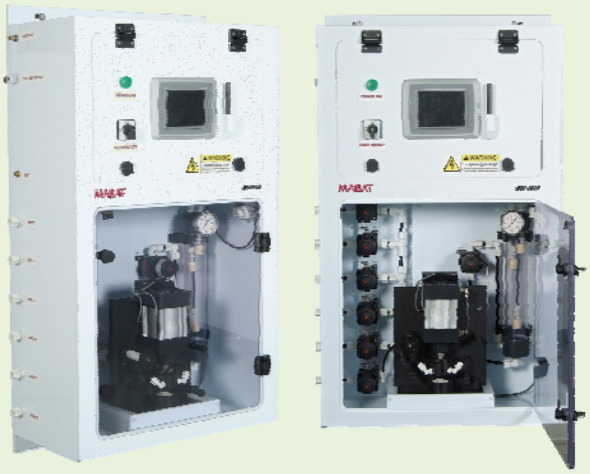
MABAT

Technical data sheet

SDI –MFI-CP 2200
SDI and Modified Fouling Index



The SDI –MFI-CP 2200 (SDI and Modified Fouling Index) is fully automatic, multi channels on line analyzer and monitoring system.
The SDI –MFI-CP 2200 is a unique analyzer and designed for continuous, unattended operation in desalination and other water treatment plants.

- Fully complies with the ASTM D4189-07
- CE certified
- Up to 4 sampling points
- Up to 85 cycles (to complete one paper filter roll) without operator interference
- Several modes for operation and calculation per channel
- Three built-in operational modes:
  1. Manual (one-cycle only)
  2. Auto (programmable time interval)
  3. Remote (pre-started selected channel from remote station)
- Two built-in calculation formula can program per channel:
  1. Standard mode test for low SDI water (less than 5.0 for 15minutes)
  2. Auto Time mode test for HIGH SDI water (greater than 5.0 for 15 minutes)

  * Measure time 1-15 minutes

Principal of operation

The SDI –MFI-CP 2200 is a combination of SDI and MFI measuring processes. The instrument has been designed to measure the SDI and MFI in three modes:

- SDI standard test mode
- SDI auto time test mode
- MFI-CP test mode

Standards

MABAT work to ISO 14001 and ISO 9001 standards, and is a member of SEMI.

All products are manufactured according to SEMI guidelines and are CE marked.

Member of semi

CE

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System's modes of operation

Standard Test Mode

Silt Density Index (SDI) is measured by comparing the flow rate of a known volume of water, where the water volume is kept under constant pressure.

The flow rate is measured twice; first time is when the water flows for reference through a standard unused filter, second time is after the filter is exposed for 15 min. or less.

The water sample flow is always kept under constant pressure.
The drop in flow rate is a direct measure of the silt build-up on the filter.

The pressure is kept constant by precisely regulating air pressure applied on the water surface without the need of any mechanical device.

Auto Time Test Mode

In cases where the silt density index (SDI) reading is unstable and readings are higher than 5 (i.e. Plugging Factor is higher than 75%), during the 15 minutes check time, the analyzer can be programmed to work in Auto Time Test Mode based on the following test method:

- The plugging factor calculations will proceed and will be recorded at intervals of one-minute elapsed
- Calculations will stop once plugging factor 75% has been reached
- New SDI readings will be displayed based on the last calculated factor

The exact check time has no valuable meaning (as in Standard Test Mode)
In general, the higher the SDI reading the more silt is in the water.

When plugging factor is calculated to be lower than 75%, the analyzer will switch and calculate the test results based on the Standard Method.

MFI-CP Test Mode

The Modified Fouling Index (MFI) measurement is based on the formation rate of a "Cake" when water containing colloids is filtered through a membrane filter.

The MFI value is determined by consecutive measurement of time for constant volume (1/2 L) to flow through the filter membrane, and computation of the ratio T/V (T-total time, V-total volume). The difference between the two consecutives, divided by the constant volume is considered to be the MFI.
The lowest volume of this measurement is the MFI result of the water.

In MFI-CP measuring procedures the absolute temp is taking into account by inserting the viscosity factor of the water to the standard temp of 20^{o}C and the result is displayed as Compensate MFI.

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MABAT can offer a turn-key solution if required and have their own experienced team or approved local contractors to ensure project installation and acceptance dead-lines are achieved.

MABAT have a range of products to suit most applications and can also provide custom built systems for non-standard requirements. Site visits can be arranged to ensure the end user's exact needs are understood and catered for.

Please contact our offices to obtain advice and quotations.

For applications outside any system's specification or capabilities please refer to our local representative or the MABAT Headquarters at Kiryat Gat.

MABAT have more than 25 years experience supplying systems to the Semiconductor and Solar Cell manufacturing industries.

Contact details

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System types

The SDI-MFI format definition: SDI-MFI 220 N-A-E-T

N	number of channels (1-4)
A	number of analog outputs (1-4)
E	Ethernet communication
T	temperature measurement

Options

- Optional analog output (programmable range) per channel for remote control and monitoring purposes
- Booster pump - When supply is in low pressure, one booster pump support all channels
- Temperature measurement and compensation (if necessary)

Dimensions

	Height	Width	Depth
Cabinet Wall mounted	1,126 mm	525 mm	310 mm

Utilities needed

Input pressure	35 – 80 psi
Flow rate	1½ l/min.
Air pressure	80 – 120 psi
Electrical	110 – 230 VAC at 4 Amp. Or 24 VDC

Filter paper type

Standard Millipore	0.45 micron roll paper
Length of roll	6 meters, up to 85 measurements per roll

Control System

- CPU
- Color touch screen

Communication

- RS488
- RS232

Reliability

Uptime	>99.9%
Repeatability	less than 0.1 SDI units