TECH INC
Incubating Technologies

TECHINC RESEARCH

DATASHEET

SILTON online SDI Analyser

Picture Shown is only for representation purpose. Actual product may vary in size, appearance, etc.

2025
RESEARCH & DEVOLOPEMENT

+91-739 749 8656 /
+91-739 749 8657 /
+91-9790857167
techincmail@gmail.com
mail@techincresearch.com
HEAD QUARTERS,
No.32, 3rd Main Road, Indian Bank Colony, Ambattur,
Chennai, Tamil Nadu 600053
India
www.TechincResearch.com

SILTON ONLINE SDI ANALYSER

About

SDI – Silt Density Index, is a measure of presence of suspended solids (SS) in feed water. Silt Density Index (SDI) testing quantifies the amount of particulate contamination in a water source. SDI is widely accepted for estimating the rate at which colloidal and particulate fouling will occur in water purification systems – especially in applications using reverse osmosis (RO) membranes.

Water sources often change their water quality and this test often needs to be done weekly or monthly. The SILTON SDI Analyser automatically calculates a relative value for the amount of suspended matter in feedwater streams. Measured values reflect the rate at which a 0.45-micron membrane filter will plug with particulate material when feedwater is flowing through it. The ASTM chose the 0.45 micron filter because it is more likely to clog from colloidal matter than from hard particles such as sand or scale. SDI testing is commonly used as an "early alert" to ensure that particulates in feedwater do not plug the micropores in RO membranes. Measurement and control of SDI is important in membrane based water treatment systems, since excess SS could clog the membrane surface. SDI values range from 0 to 6.6, with 6.6 as maximum. All RO/ Nano membrane manufacturers specify a limit of SDI < 5 for smooth operation of their membranes. Our Auto Online SDI Analyser is used to measure the SDI value of any given water stream inside a pipe with the least possible human effort.

SDI is calculated based upon the decay in flow rate during a 15 minute period across a new 0.45 micron filter installed in the built-in holding fixture. Flow rate measurement accuracy is ensured by automatically maintaining a constant 30 psi (2.07 bar) in the feed stream to the filter.Flow rates are measured during the collection of 500 mL samples at the start of the test and after 5, 10, and 15 minutes. SDI units (percent decay per minute) represent the degree of plugging that may occur due to the feedwater stream particulate and colloidal levels. The 15 minute SDI (SDI 15) is defined by ASTM D 4189-95 as the interval required for accurate and standardized testing. The 5 and 10 minute SDI values are only estimates of the 15 minute value.In addition to calculating SDI 15, the measured decay in flow rate is also converted from an SDI value to plugging factor (PF) value, a number between 1 and 100%. 100 percent means the filter is completely plugged. This provides an understandable point of reference for the potential of your RO membranes to plug — the higher the percentage, the faster your membranes may become fouled with particulates.

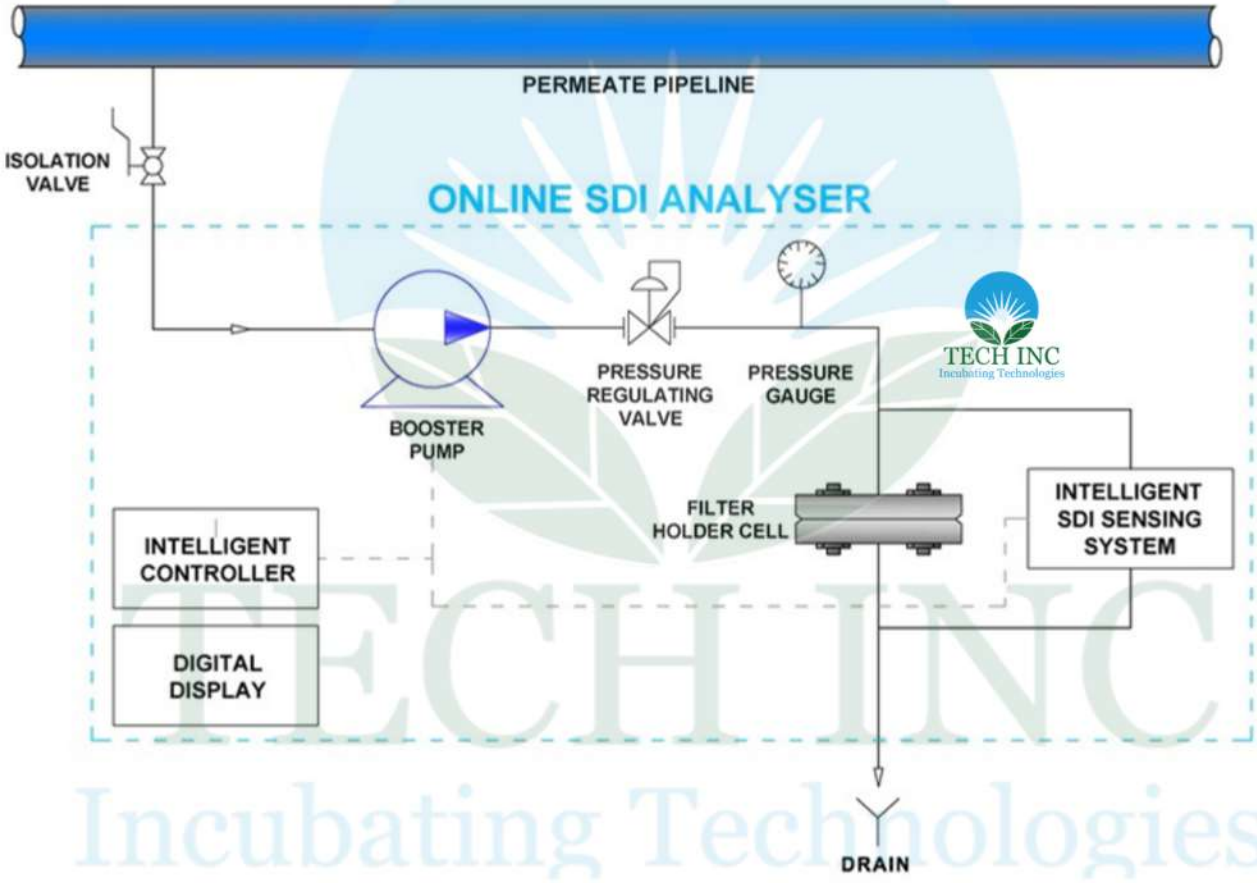
+91-739 749 8656 /+91-739 749 8657
+91-739 749 8656 /+91-739 749 8657
techincmail@gmail.com
mail@techincresearch.com
www.TechincResearch.com
No.32, 3rd Main Road, Indian Bank Colony, Ambattur, Chennai, Tamil Nadu 600053 India

SILTON ONLINE SDI ANALYSER

The Silton 4750 Online SDI Analyser is an accurate, easy-to-use, precise instrument that can dependably measure the Silt Density Index (or) SDI value of any water stream, Silton can be connected inline to a water flow system.

The Analyser is enclosed in a robust metal casing protecting the instrumentation inside, allowing it to be used for a wide range of industrial applications. Silton offers many advantages over conventional portable SDI systems in terms of increased accuracy, robustness, reliability and comfort

Silton 4750 consists of a booster pump, pressure regulation system, intelligent SDI sensing system, controller and digital display as shown below -



+91-739 749 8656 /+91-739 749 8657
+91-739 749 8656 /+91-739 749 8657
techincmail@gmail.com
mail@techincresearch.com
www.TechincResearch.com
No.32, 3rd Main Road, Indian Bank Colony, Ambattur, Chennai, Tamil Nadu 600053 India

SILTON ONLINE SDI ANALYSER

Silton 4750

The booster pump ensures that the incoming feed water is boosted and maintained at the required pressure and inline with SDI measurement ASTM standards, providing constant test conditions, thereby ensuring repeatability

The pressure regulation valve and pressure gauge, further ensure that required pressure of feedwater is maintained and controlled, before being fed to the Filter Holder Cell (FHC)

The Filter Holder Cell (FHC) consists of two sturdy Steel plates that sandwich the SDI filter paper/membrane, its support plates and mesh and O-ring. The O-ring ensures that bypass of feed water is avoided, thereby ensuring integrity of the system. ASTM recommends usage of a 0.45 Micron filter paper to be able to filter out colloidal and suspended particles that contribute to the SDI value of the feedwater. The FHC is also built with fittings and nuts that enable quick change of used SDI papers. The FHC is connected to the proprietary SDI sensing system that is able to accurately measure the quantity of water flowing through the FHC and follow the ASTM and thereby provide a SDI value automatically in the display.

Filter Holder Cell

FHC Dissassembled with Filter Paper

+91-739 749 8656 /+91-739 749 8657

+91-739 749 8656 /+91-739 749 8657

techincmail@gmail.com

mail@techincresearch.com

www.TechincResearch.com

No.32, 3rd Main Road, Indian Bank Colony, Ambattur, Chennai, Tamil Nadu 600053 India

SILTON ONLINE SDI ANALYSER

Specifications

SDI Analyser

Model Name	Silton 4750
Measurement Span	SDI 0 to 6.6
Type	Online
Process Connections - Inlet	1/4" BSP
Process Connections - Outlet	1/4" BSP
Electrical Input	230 V AC, 50 Hz, Single Phase
Display	Backlit Color LCD
Temperature of Operation	10 to 40 °C
Maximum Temperature	50°C
Principle/Standard of Operation	ASTM D-4189
Dimensions (approximate)	400 mm W x 600 H mm x 250 mm H May vary based on model and year
Pressure of Operation	0-2.5 Kg/cm2 (or) 36 psi
Maximum Pressure	4 Kg/cm2 (or) 58 psi

Filter Holder Cell

Diameter of Filter Paper/Membrane	47 mm
Micron Rating	0.45 Microns
O-ring	Buna

Booster Pump

Flow	1.6 LPM
Pressure	4 Bars Max
Type	Diaphragm

+91-739 749 8656 /+91-739 749 8657
+91-739 749 8656 /+91-739 749 8657
techincmail@gmail.com
mail@techincresearch.com
www.TechincResearch.com
No.32, 3rd Main Road, Indian Bank Colony, Ambattur, Chennai, Tamil Nadu 600053 India

SILTON ONLINE SDI ANALYSER

Specifications

Materials of Construction

Filter Holder Cell	AISI 304
Piping	AISI 304 & PU
Valves	AISI 304 Casing

Dimensions

400 mm W x 600 H mm x 250 mm H

May vary based on model and year

Weight

~18 Kg

May vary based on model and year

Features

Increased ease of measurement

Reduced time of measurement

Accurate SDI everytime

User-friendly, custom built software for accurate measurement

Robust and dependable data-acquisition system

+91-739 749 8656 /+91-739 749 8657

+91-739 749 8656 /+91-739 749 8657

techincmail@gmail.com

mail@techincresearch.com

www.TechincResearch.com

No.32, 3rd Main Road, Indian Bank Colony, Ambattur, Chennai, Tamil Nadu 600053 India

SDI Test Principle & Procedure

1. Feed water is allowed to pass through a membrane of 0.45 microns pore size with 47 mm diameter held inside a membrane holder at a regulated pressure of 2 kg/cm2.

2. Initial Time, T i required to filter a known volume (500ml) is measured.

3. Feed water is allowed to permeate through the membrane for an interval of T int = 15 minutes – time is measured by Analyzer's controller.

4. Final Time, T f required to filter the same preselected volume of 500ml is measured.

5. Silt Density Index is manually calculated using the formula
SDI = (1 - Ti /Tf) x 100/T int

6. Depending on the feed quality, the volume of measurement of 500ml can be varied
between 100 ml to 500 l.

7. Depending on the feed quality, the time interval T int of 15 min can be varied to 5/ 10/ 15 minutes.

As you can see, the above process is time consuming and requires a skilled operator and constant attention. The Auto SDI kit does all the above work for you automatically. This ensures a correct SDI reading every time. In our Auto SDI kit, steps 2 to 7 are made available on a control screen, with provisions for selecting various options for time intervals and volumes of selection, with START/STOP button, to initiate the process of measurement with preselected values, and the final SDI index is displayed on the screen. Further, provision is available to record the values taken at various points of time.

+91-739 749 8656 /+91-739 749 8657
+91-739 749 8656 /+91-739 749 8657
techincmail@gmail.com
mail@techincresearch.com
www.TechincResearch.com
No.32, 3rd Main Road, Indian Bank Colony, Ambattur, Chennai, Tamil Nadu 600053 India

Factory Photos




CANADA

INDIA

Warehouse Photos




Factory FootPrint
>65,000 Sq.ft

Well-stocked & Agile
Year Long Production

Automated Processes
AI Predictive stocking

7 Day Dispatch
on Standard products

Company vision & Values

Constant innovation to lead the market

Honesty & Transparency

Constant customer empowerment & contact

Made to meet Global Standards

Cost Saving Products Value for Money

Being part of a 30 year old group with vast experience in the field of manufacturing, filtration and separation, Tech Inc. stands on rock solid foundation of technical strength. We design and develop equipment suitable for making, testing and characterization of emerging technologies

Office Photos

Lab Photos

Shipment

DHL Fedex UPS Aramex

Aliexpress India Post Canada Post Blue Dart

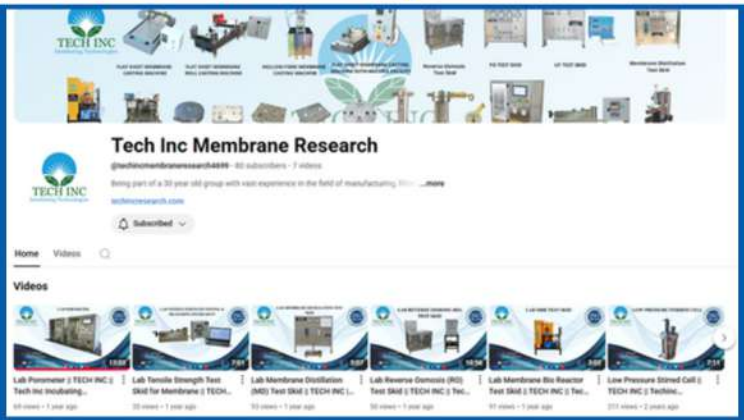
Freight Forwarder Partnerships

VISA mastercard AMERICAN EXPRESS G Pay Pay

amazon pay Razorpay shopify payments

PayPal stripe BHIM RuPay

Payments Accepted



TECH INC

EXPERIENCE 32 YEARS

Tech Inc.'s Scope of Work & Services

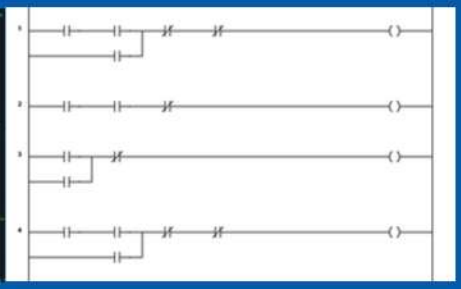
Design | Supply | Installation | Training | Service | Maintenance

Electronics

- Human Machine Interface
- Programmable Logic Controller
- Supervisory Control and Data Acquisition
- Distributed Control System

Software

- Ladder Programming
- Labview
- Visual Basic
- C++
- React



Visual Studio | LabVIEW | React | C++

Components used

LIQUID MASS FLOW CONTROLLER FROM BRONKHORST, NETHERLANDS

LIQUID MASS FLOW METER FROM BRONKHORST, NETHERLANDS

GAS MASS FLOW CONTROLLER FROM BRONKHORST, NETHERLANDS

DCS FROM SCHNEIDER, GERMANY

PANEL/CABINET FROM RITTAL SWITZERLAND

WET GAS FLOW METER FROM RITTER GERMANY

THERMOCOUPLE FROM WATLOW, USA

SWAGELOK FITTINGS

REPUTED INDUSTRIAL LAPTOP

PRESSURE GAUGE FROM WIKA, GERMANY

SWAGELOK REGULATORS

SWAGELOK CHECK VALVES

SWAGELOK PRESSURE RELIEF VALVES

TEMPERATURE CONTROLLERS FROM WATLOW, USA

SS TUBING FROM SWAGELOK

Methodology