

TRITECH TI-EDI INDUSTRIAL ULTRAPURE WATER SYSTEM

TriTech

MEMBRANE RELATED PRODUCT

Introduction

Ultrapure water is a kind of water that all conductive mediums have been completely removed and the undissociated colloidal substances, gases and organic matters are reduced to a minimum level.

Tritech ultrapure water system is a perfect combination that used the most advanced and energy saving RO separation technology as pre-treatment, combined with Electro-Deionization (EDI) technology. Using EDI module instead of mixed bed has many advantages like advanced process, reliable quality, strong scalability, small footprint, continuous production, no acid-alkaline regeneration and environmentally friendly. Tritech TI-EDI ultrapure water system is fully automated and easy to operate.

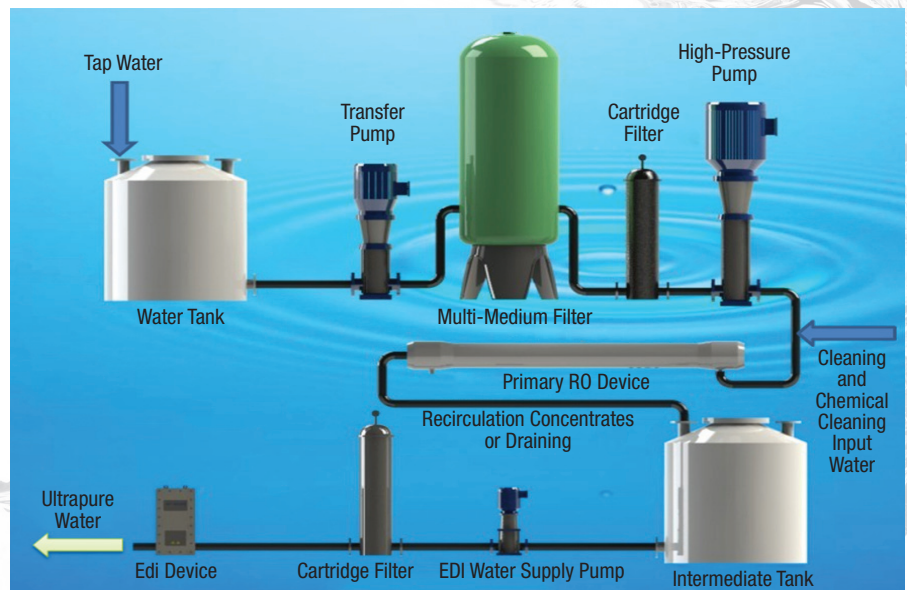
TI-EDI ULTRAPURE WATER SYSTEM OUTLINE



SYSTEM FEATURES

- System on-line monitoring, System parameters on-line display, self-diagnosis at start-up, automatic draining, automated consumables replacement reminder.
- Multi-system protection, shutdown protection for system error or leakage, low pressure, no water and high pipe pressure monitoring.
- Utilizing advanced EDI technology, Tritech TI-EDI is capable of producing ultrapure water continuously with stable output water quality.
- Do not require acid/alkaline regeneration for EDI, avoided the hazards of using those harmful chemicals.
- No regeneration/spent waste water, clean process.
- Small footprint, easy to operate and maintain with environmentally friendly advantages.

TI-EDI ULTRAPURE WATER SYSTEM PROCESS FLOW



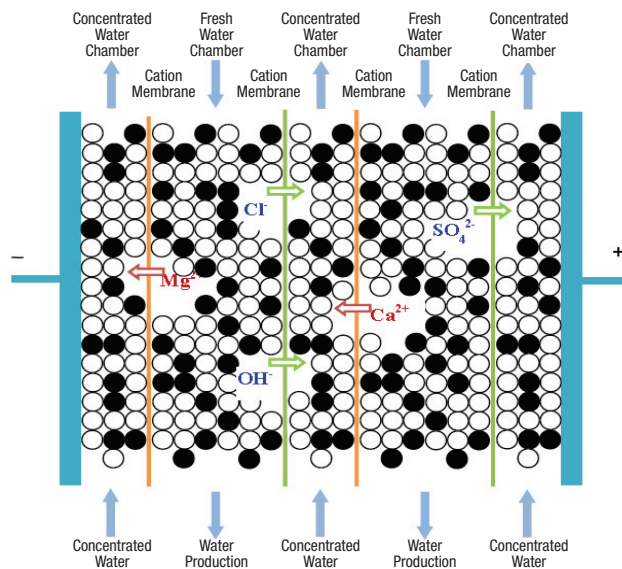
TI-EDI SYSTEM MAIN APPLICATION AREAS

Tritech ultrapure water system combined RO technology and the advanced EDI technology. Do not require the use of acid/alkaline chemical reagents for regeneration, the unstable factors of water quality was minimized and the operating cost was kept to a minimal level. Tritech ultrapure water system can work either continuously or in batch mode. The ultrapure water produced can be used for process in chemical industries, for boiler in electrical industries, in food industries, in ultrasound cleaning, in electroplating industries, and other processes for car, household electrical appliance coating, glass coating, cosmetics and fine chemicals.

SYSTEM WORKING PRINCIPLES

System used the optimal combination of RO and EDI, the working principles of EDI is as shown in the figure on the right:

The cationic and anionic exchange membranes are stacked simultaneously between the cathode and anode of the EDI stack. The membranes only allow ions to pass through, while retaining water in the chamber. Each of the concentrate and dilute membrane chamber contains an ion exchange resin. In the dilute chamber, the produced OH⁻ ions are exchanged with anions (such as Cl⁻), while the produced H⁺ ions are exchanged with cations (such as Na⁺). The exchanged ions are then directed by the electric field to pass through the respective ionic membranes and into the concentrate chamber, while water stripped of its conductivity flows out as product water. At the same time, ionization of water produces H⁺ and OH⁻ ions to regenerate the ion exchange resin, eliminating the need for chemical regeneration of the resin.



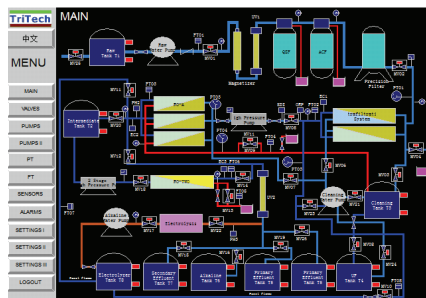
TI-EDI SYSTEM MAIN SPECIFICATIONS

- Raw water quality requirements: Municipal tap water, groundwater (adds pre-treatment equipment);
Total solids content: TDS<800mg/L; Turbidity: <0.2NTU;
pH range: 4-11;
Free residual chlorine: <0.1mg/L; Iron, manganese <0.05mg/L;
Water temperature: 5°C-35°C;
Water pollution index: SDI<3;
- Output water quality:
Water temperature: 5-40°C
Conductivity: 15~18.2MΩ.cm(25°C)
pH range: 6.5-7.5
Silicon dioxide: 20~25ug/l

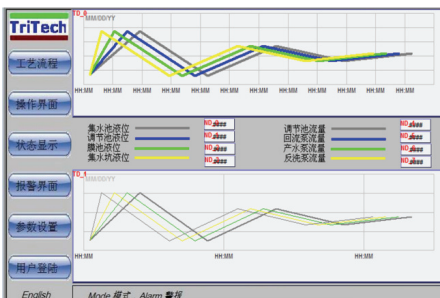
SYSTEM MODELS

Model	Output Volume (m ³ /h)	Concentration Nominal Flow Rate (LPH)	RO Power Consumption (KW/h)	EDIPower Consumption (KW/h)
TI-EDI-0.5	0.5	50	2.4	1.8
TI-EDI-1	1	100	3.0	2.7
TI-EDI-5	5	600	6.5	4.5
TI-EDI-10	10	1300	10.0	9
TI-EDI-20	20	2600	17.5	18
TI-EDI-50	50	6500	35.0	44
TI-EDI-100	100	13000	67.0	88

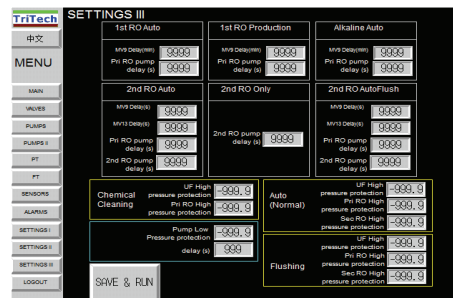
HUMAN MACHINE INTERFACE



Process Flow Tracking



Display Records Change Plot



Parameters Setting Page