



Ultrapure Water (UPW) Conditioning System

The DFS Fusion™ UPW Conditioning System provides an uninterrupted flow of filtered ultrapure water (UPW) at extremely stable flow, pressure, and temperature. The system uses maglev pumps, pressure transducers, filters, Teflon heat exchangers, and precision proportional flow control valves (PFCV) for closed loop control of the process. Built-in metrology options monitor and alarm for any conditions that are out of specification.

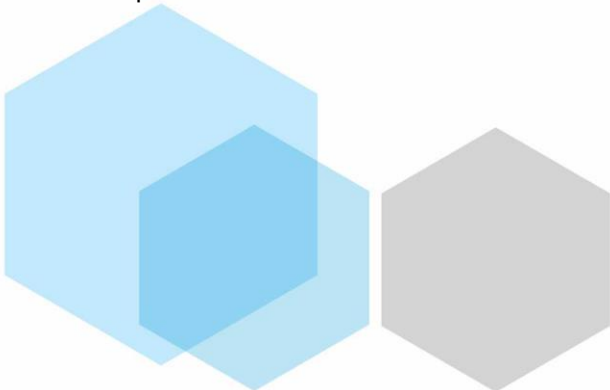
The pumps move incoming UPW through a pair of redundant filter housings and two parallel tube and shell heat exchangers. The heat exchangers use facility-supplied process cooling water to obtain the desired temperature. Once the UPW leaves the heat exchangers, it joins a common process line where it blends with non-cooled water with PFCVs that control the flow of each to maintain user-defined temperature parameters. Built-in metrology monitors the quality and purity of this process, and the filtered UPW exits through a final PFCV coupled to a flow meter to provide precise flow out of the system.

In the event of a resistivity alarm, process cooling water is diverted to waste and isolated to prevent cooling water from flowing into the process line.



Advantages

- ▶ Fully automated system
- ▶ Low cost of ownership
- ▶ Flexible and user-friendly HMI
- ▶ Space efficient design
- ▶ Temperature control +/- 0.25C



DFS UPW CONDITIONING SYSTEM

Features

- ▶ Pressure transducers
- ▶ Flow meters
- ▶ Temperature monitoring
- ▶ Two 10-inch filter housings
- ▶ Redundant maglev pumps
- ▶ Teflon™ heat exchangers
- ▶ Proportional flow control valves
- ▶ Resistivity sensor
- ▶ All wetted flow paths are PFA or PTFE
- ▶ Polypropylene cabinet materials

Safety

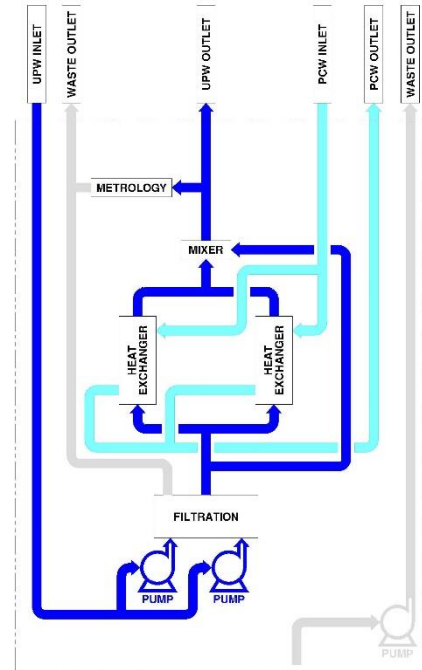
- ▶ Cabinet leak detection and alarming
- ▶ Cabinet door interlocks
- ▶ Cabinet contains 110% of the largest volume
- ▶ Waste pump for system draining and maintenance
- ▶ Local and remote EMO capability
- ▶ SEMI S2 Compliant
- ▶ UL 508A Certified

Options

- ▶ FM4910 cabinet materials
- ▶ SEMI S2 Certified

Controls

- ▶ PLC and HMI
 - On-screen system P&ID
 - Maintenance and shutdown monitoring
 - Force screens for maintenance and troubleshooting
 - Pump runtime monitoring
 - Password protected screens
 - Manual activation of valves/pumps
- ▶ Connectivity to system PLC Ethernet networks
- ▶ Communication with PC via PLC network



Model	UPW Conditioning System
Applications	UPW
Flow Rate	0-5 LPM
Pressure Control	+/- 0.3 psig
Footprint	40"Dp x 36"W x 73"H

Facility Requirement	Utilities
Ultrapure Water (UPW)	5 LPM
Process Cooling Water	10 LPM
Clean Dry Air (CDA)	10 SCFM
Process Drain	5-20 LPM
Power	120VAC



DFS Diversified Fluid Solutions
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