



KINETICS CD 200

Chemical Dispense System-Performance Configuration

- Precise—operational modes and materials resulting in high performance
- Stable—redundant design ensures accurate and consistent operation
- Reliable—proven components, accessible layout

SYSTEM OVERVIEW

The Kinetics CD 200 Chemical Dispense System provides safe, pure and reliable distribution of process chemicals to critical semiconductor and photovoltaic process modules. The system features two independent pumping modules for operational redundancy. The primary pumping module distributes chemical to the factory and provides continuous filtration and recirculation to maintain very low particle levels. The secondary module is used for source container operations such as transferring chemical to the day tank and recirculation back to the source. The secondary pump module can also be used as back-up to dispense chemical to the factory during maintenance of the primary module. The CD 200 system is designed to provide the level of precision and robustness required for sensitive process operations.

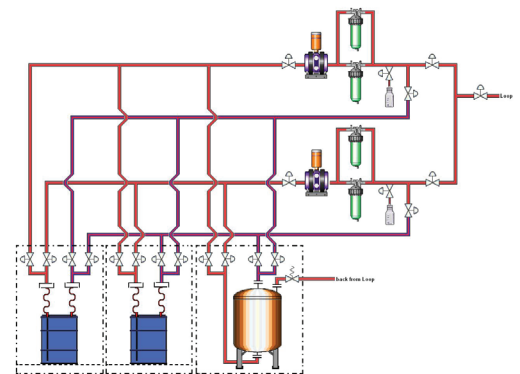
KEY FEATURES:

- Two independent pumping modules
- Flow rate configurations of 15, 30 and 50 liters per minute
- Diaphragm pumps, with pulsation dampeners
- Day Tank, for buffer storage capacity
- Redundant chemical filter housings (10" or 20")
- Two circuits for chemical recirculation and polishing
- Use of integrated valve bodies for reduced footprint and fewer leak-points
- DI/N₂ maintenance services for pumps and filters
- DIW spray gun

OPTIONS:

- Cabinets for source drums and day tank (up to 500L)
- Fab-wide recirculation
- Up to 3 chemical outlet valves
- Automated maintenance services
- Pump stroke counter and leak detection
- Optional centrifugal pumps, for high-flow applications
- Bar code reader
- Stainless steel cabinet for solvents
- Pressure & flow indicator on pump outlet
- High-flow switch, for system shut-down
- HEPA filtration module for drum cabinets, day tank cabinets and sample station
- Lower cost polyethylene components, for non-critical processes

PROCESS FLOW DIAGRAM



Configuration with redundant pumping modules

RELIABILITY

- MTBF > 6000 Hours
- MTBA > 4500 Hours
- MTTR < 2 Hours
- Availability > 99.95%

TECHNICAL DATA

CONTROLS

- Allen-Bradley SLC 500 or Siemens S7 series PLC
Allen-Bradley Panelview 550 or Siemens TP177B HMI, displaying:
 - System P&ID status
 - Alarm and warning screens
 - Distribution valve box status
 - Pump and filter runtime screens
 - Password-protected maintenance screens
 - Manual activation of valves and pumps
- Connectivity to factory control system

SAFETY FEATURES

- Segregated electrical and chemical compartments
- Local and remote EMO
- Cabinet leak detection and door interlocks
- Audible and visual warnings and alarms
- Options for exhaust and high-flow sensors
- Optional cabinets for drums, IBC's and day tank

SPECIFICATIONS

PARAMETER	CAPABILITY
Application	Acids, Bases, Solvents
Dispense Rate Configurations	15, 30 or 50 LPM, at 40 psi ¹ (3 barg)
Flow Path Configurations	¾", 1", or 1 ¼"
Cabinet Materials	Polypropylene for acids and bases, 304SS for solvents
Filter Housings	Optional 1 or 2, 10" or 20"
Day Tank Sizes	200L, 500L, 1000L (larger upon request)
Source Containers	Single or Dual Drums (200L) or IBC's (1000L)
Cabinet Footprint (WxDxH)	63" x 40" x 79" (1600mm x 1000mm x 2000mm)
Component Materials— Performance Set (Standard)	<ul style="list-style-type: none"> • PFA or PTFE valves • PTFE pumps and pulse dampeners • PFA tubing and fittings • PFA filter housings • PFA or PTFE-lined day tanks
Component Materials— Economy Set (Optional)	<ul style="list-style-type: none"> • PFA or PTFE valves • PTFE pumps and pulse dampeners • PFA tubing and fittings • PFA filter housings • PFA or PTFE-lined day tanks

* Dispense Rate based on water; chemicals with higher viscosities will have lower flow performance.

FACILITY REQUIREMENTS

UTILITY	REQUIREMENT	CONNECTION TYPE
DI Water	Normal 2 GPM @ 55 psi, Peak 5 GPM @ 55 psi (Peak 20 LPM @ 4 barg)	½" PFA Flare
N ₂	2 SCFM @ 90 psi (3.5 Nm ³ /hr @ 6 barg)	½" SS Swagelok
CDA	30 SCFM @ 90 psi (51 Nm ³ /hr @ 6 barg)	¾" SS Swagelok
Exhaust	227 SCFM @ 2" H ₂ O (384 Nm ³ /hr @ 2" H ₂ O)	6" Pipe Flange
Process Drain	13 GPM @ 70 psi (50 LPM @ 5 barg)	1" FNPT, polypropylene
Cabinet Drain	Gravity	1" FNPT or DN15 butt weld, polypropylene
Power	100 to 240VAC, 50-60 Hertz, 15 amps	¾" Conduit