The MonoChem™ Chemical Delivery System supports the supply of a single chemical in a system with up to four (4) independently controlled/maintained outputs. Our unique design utilizes a fixed chemical reservoir which feeds the outlets and a replacement source tank that refills the fixed reservoir. This allows the system to operate continually without the need to requalify the delivery system when new chemical is added.

ADVANTAGES:
- Supplies One (1) Chemical to up to Four (4) Tools/Chambers with Independent Operation & Maintenance
- Continuous Chemical Supply eliminates Process Requalification after Tank Changes
- Compatible with Multiple Tool Types and Source Containers

DESIGN & OPERATION:

Chemical:
- 5 gallon source tank feeds 3 gallon fixed tank.
- 3 gallon fixed tank automatically refills to maintain 45% level.
- Source tank exchange does not affect chemical delivery to host tools/chambers.
- Manual valve control for tank exchanges.

Level Monitoring & Control:
- Discrete controller monitors fixed tank levels and automatically refills tank as needed
- Scale monitors and displays source tank weight
- Dopant container levels monitored by level sensor interface or scales (for 1 gal and larger tanks)

Chemical Distribution:
- Distribution manifolds have dedicated chemical and inert gas purge valves
- Each branch operated independently from the others
- Each outlet can be fitted with an optional degas module

Tool & Facility I/O:
- Controller has DI/DO port for each outlet. DI tool permissive contact signal controls chemical supply from System. DO signals include chemical levels and general system status fault.
- Facility DI/DO: Dry contact input can override and close all chemical outlets. DO signals include chemical tank levels and general system status warning and fault.
CONFIGURATION OPTIONS SPECIFIED AT TIME OF ORDER:

Continuous Chemical Dispensing: 1, 2 or 4-outlet.
- 3 gallon Refillable Fixed Tank and Supporting Manifold Included.
- Supports user supplied 5 gallon Source Tank.

Source Chemical Dispensing:
- Direct chemical dispensing from user supplied Source Tank.
- 3-gallon Fixed Tank and supporting manifold not included.
- SD4-C Refill Controller used for Source Tank level monitoring and display, utility monitoring, Facility and Host Tool/Chamber communication I/O.

SPECIFICATIONS:

Mechanical
- Dimensions H x W x D, in. (cm): 78" (198) x 17.75" (45) x 18" (46)
- Clearances, in. (cm): Front 48" (122), Sides 4" (10), Top 24 (61)
- Spill Containment Volume: 7 gal (26.5 liters)

Utility Requirements
- Electrical: 100-240 VAC, 50/60 Hz, 750mA max.
- Enclosure Exhaust: 85 CFM, -0.03 in. H2O duct static pressure, (6" duct)
- Process Helium: 85 psig min., 20 slm max flow rate
- CDA: 85 psig min., 2 slm max flow rate
- General N2 (Vacuum Generator): 80 psig, 20 slm max flow
- Vacuum source for degasser

SD4-C CONTROLLER DETAIL:

Power: 100-240 VAC, 50/50 Hz, 750 mA

Control Inputs:
- Source Tank Scale/Level switches
- Fixed Tank Levels: (4 Levels)
- Spill Sensor
- CDA Pressure
- Helium Push/Purge Gas Pressure
- Degasser Vacuum
- Degasser Liquid Leak

Chamber I/O:
- Source A, B, C Level Empty Output
- Chemical System OK Output
- Chamber OK Input

Facility I/O:
- Source A, Level Low & Empty Outputs
- External Shut-Down Input
- System General Warning Output
- System General Fault Output

Controls:
- Auto Fill On-Off
- Manual Fill Pushbutton
- Reset Sonic Alarm

Display:
- Source A Tank Weight (kg)
- Color changing display (Green, Yellow, Red)
- Source A, B, C Low & Empty
- Fixed Tank Level / Filling Status
- System Status
  - CDA, Inert Gas, Degas Vacuum
  - Chem Spill, Degas Leak, Status (GRN, YEL, RED)
  - Tool (Chamber) 1-4 Permissive Status

Since 2000, Critical Systems, Inc. (CSI) has been supporting the breakthrough technologies of our customers with practical, cost effective solutions that “surround the process tool”.

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