

# MegaTrend™

## Auto-Titration/Replenishment System

- » Full replicated analysis in less than 30 minutes
- » Spiking control greater than +/- 0.05%
- » Continuous blend and distribution volume measurement
- » Auto-calibrating and self-cleaning



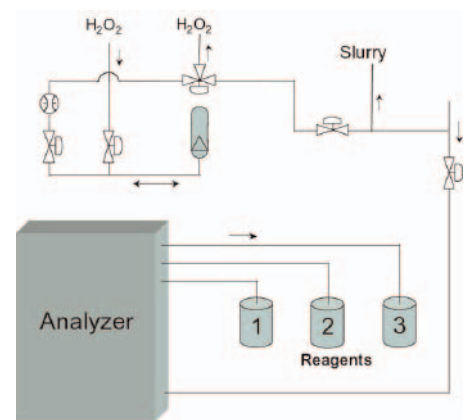
### System Features

The use of hydrogen peroxide oxidized slurries for the Tungsten and Copper CMP process has become very common within the industry. Maintaining the desired concentrations of hydrogen peroxide uniformly and accurately is one of the keys to overall process optimization. Decomposition of hydrogen peroxide will cause the slurry mixture to fall out of the manufacturer's specifications, thus affecting the polishing process.

Hydrogen peroxide degrades over time due to several environmental conditions. These include exposure to ultraviolet light, heat and low pressure environments. This means that if the defined deviation is 0.2 mass percent from the set point, after 30 hours of non-disturbed operation (no batch transfer) the batch would be out of specification.

The MegaTrend System enables you to control the concentration of hydrogen peroxide in the blended slurry, thus extending pot life and improving polishing performance. Slipstreams at the blend and distribution systems, the hydrogen peroxide bulk supply and up to two points in the slurry global loop allow for independent monitoring of the peroxide concentration at a user-defined frequency. After the titration is complete, the replenisher system will precisely add the appropriate volume of hydrogen peroxide to the blended slurry.

The MegaTrend Auto-Titration/Replenishment System, integrated with a MegaFlow III or V, and a MegaPure 100 hydrogen peroxide feed system, supplies polishers in the fab with a constant stream of CMP slurry which is always in specification.

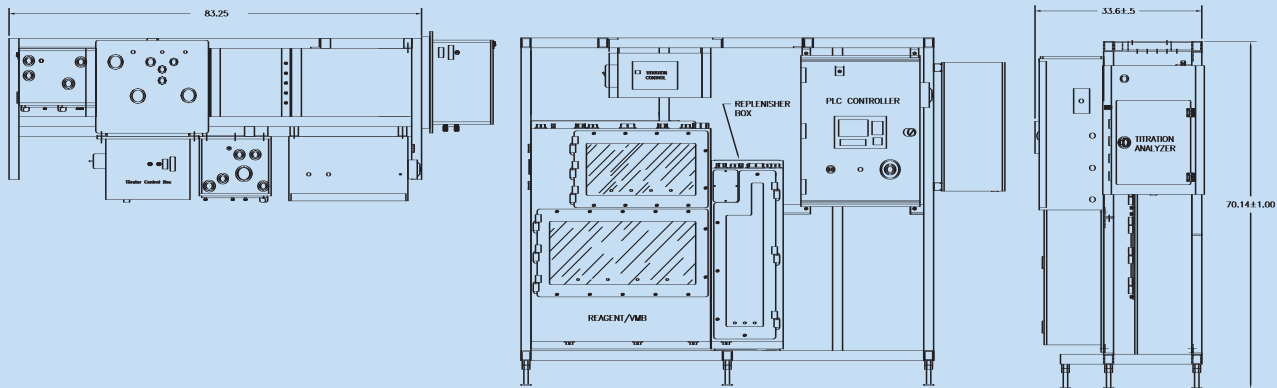


### Reliability

- > 2,500 hrs MTBF
- > 1,250 hrs MTBA
- < 3 hrs MTTR
- > 99.5% availability

### Performance

- Reagent volume: ±0.1 ml accuracy
- Spiking control: ±0.05% accuracy
- Concentration measurement: ±0.05% accuracy



## Controls

- Allen-Bradley SLC 500 series PLC
- Allen-Bradley Panelview 550 operator interface
  - System P&ID/status
  - Alarm and warning screens (active and historical)
  - Password protected maintenance screens
  - Replenisher overview
  - Valve manifold and reagent cabinet overview
  - Analyzer and system status displays
  - User definable automatic event sequence
- Connectivity to system PLCs & MegaView™ Supervisory via DH+ or Ethernet network
- Allen-Bradley gateway connection to FMS
- Local and remote EMO capability

## Components

- Highly accurate replenishment flowmeter
- Reagent line quick disconnects
- Ultrasonic continuous level detectors
- Discrete low and empty reagent level sensors
- Durable/Transparent reaction vessel

Model	MegaTrend ARS
Application	H <sub>2</sub> O <sub>2</sub> - based slurries
Tool interface flowpath	3/8" PFA
Hardware mounting rack	Powder - coated stainless steel
Wetted cabinets	Polypropylene/PVC window
Footprint	67" x 84" x 40"
Typical reagents for peroxide detection	
High indicator standard	1 N Ce (NH <sub>4</sub> OH)(SO <sub>4</sub> )
Low indicator standard	0.2n CE (NH <sub>4</sub> OH)(SO <sub>4</sub> )
Analysis medium	6 N H <sub>2</sub> CO <sub>4</sub>

Facility requirements	MegaTrend ARS	Connection Type
DI	1-3 GPM @ 25 psi	3/8" Flaretek
N2	2 SCFM @ 90 psi	1/2" SS Swagelok SS
Exhaust	40-60 SCFM 2" H <sub>2</sub> O	2" FNPT
Cabinet drain	Gravity	3/4" FNPT
Power	110-120 VAC, 15 AMP	3/4" Conduit (PLC controller)
Communication s DH+	In and Out	3/4" Conduit
Discrete connection	In	3/4" Conduit



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