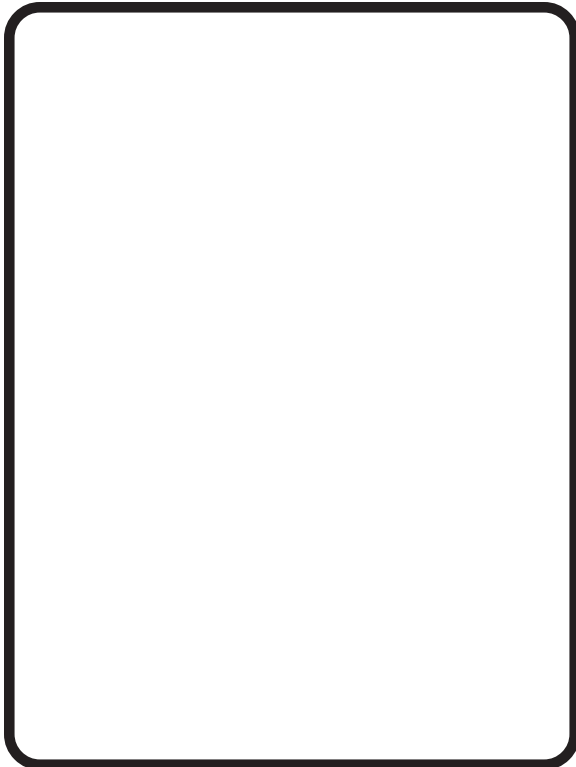


SERFILCO®

PLATING BATH COLORIMETRIC CONTROLLERS

BULLETIN
A-311
OCT. 1993

For automatic control of electroless copper, electroless nickel, per sulfate microetch and other processes that may be controlled by their blue or green color densities.



RELIABLE and PRECISE

- Easy plug-in installation
- Proven colorimetric control technique
- NEMA 4X watertight corrosion-resistant enclosure
- Submersible sensor for quick response
- Flow-through sensor available if tank space is limited
- Analog output to chart recorder for SPC
- Informative digital display
- One year limited warranty

TIGHT CONTROL OF Cu OR Ni CONCENTRATIONS

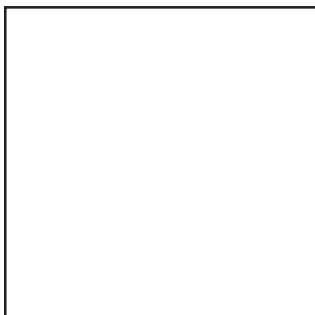
W-10 Series controllers have earned their world-wide reputation as cost effective, reliable copper or nickel control systems.

Metal concentrations are maintained within 1% of the desired value, and as many as five bellows pumps can be used to proportion in other bath components, greatly reducing the frequency of time-consuming lab analysis.

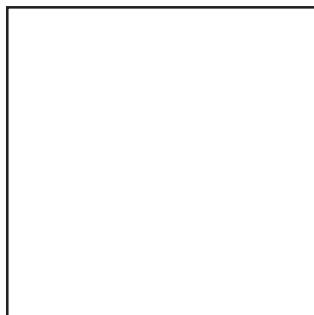
The submersible sensor mounts directly in the plating tank to provide instantaneous response to changes in concentration. If space is at a premium, a flow-through sensor may be mounted to the side of the tank and plumbed to the circulation pump outlet line, with solution returning to the tank after passing through the sensor.

In electroless nickel applications, the flow-through sensor/degasser must be used in conjunction with a cooling coil.

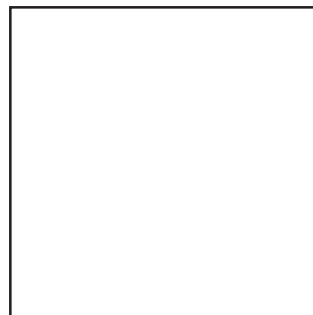
The sensor monitors the metal concentration of the bath by transmitting light through the bath to a receptor, which sends an analog signal to the control module. The control module interprets the signal, displays deviation from setpoint and responds by turning on the replenishment pumps as required. The pumps may be energized automatically, manually, or turned off completely while the control module continues to monitor and display any deviation from setpoint.



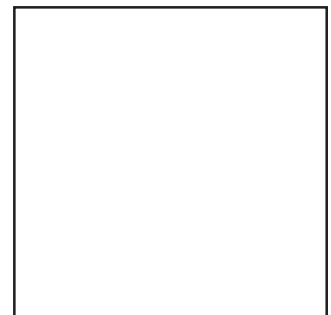
ELECTROLESS COPPER



ELECTROLESS NICKEL

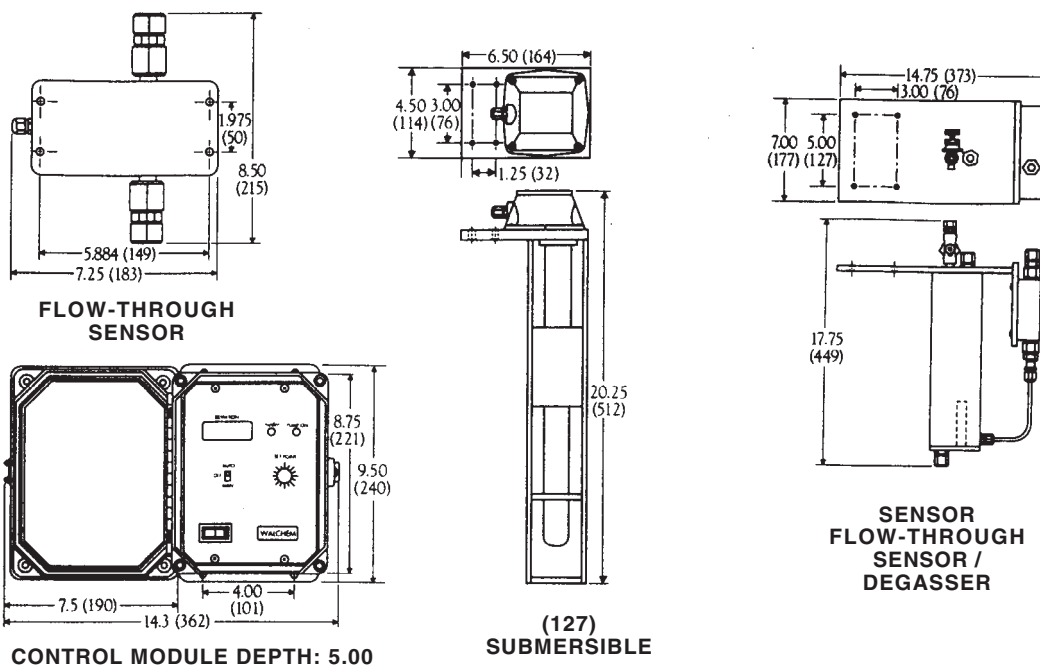


MICROETCH



INNER LAYER CLEANER

DIMENSIONS and MOUNTING Inches (mm)



SPECIFICATIONS

ELECTRICAL PERFORMANCE		MECHANICAL	
Range	...1VDC	Enclosure	Fiberglass, NEMA 4X rated
Resolution	0.01VDC	Dimensions	See above

OPERATIONAL			
	W-11, W-15, W-11F, W-11M	W-12, W-16, W-12F, W-12MF	W-13, W-17, W-13F, W-13MF
Power cord	USA	DIN	UK
Power requirement	115VAC ...15%		230VAC ...15%
Frequency	60 Hz		50 Hz
Control output	Mechanical relay 6A (res.)	Mechanical relay 3A (res.)	
Analog output	Use receiver with 1000 ohm min. resistance (...0.15VDC)		
Alarm	LED, active at ...0.15VDC		

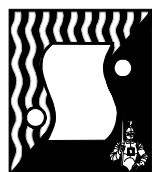
TO ORDER

Order your controller based upon the operational specifications above.

Models W-11, W-12 & W-13 are electroless copper controllers with submersible sensors.
 Models W-15, W-16 & W-17 are electroless nickel controllers with flow-through sensor/degassers.
 Models W-11F, W-12F & W-13F are electroless copper controllers with flow-through sensors.
 Models W-11M, W-12M & W-13M are microetch controllers with submersible sensors.
 Models W-11MF, W-12MF & W-13MF are microetch controllers with flow-through sensors.

MODEL	PRICE CODE NO.

F.O.B. Northbrook, Illinois



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 Northbrook, IL 60062-5360 708-559-1777
 800-323-5431

FAX: 708-559-1995

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