

# PALM TECHNOLOGY, INC.

## ENControl™ ELECTROLESS NICKEL CONTROLLER

### Model 3300

The Model 3300 is a state-of-the-art, automatic controller for electroless nickel plating baths. It will maintain the bath's strength within very close limits with a minimum of operator assistance. The controller is very easy to use and may be adapted for most electroless nickel solutions.

The Model 3300 features a 7" widescreen high resolution touchscreen which makes the user interface as simple as possible. It incorporates Palm's industry proven electroless nickel control technology with some of the most advanced control technology for today's electroless nickel baths.

The Model 3300 monitors the bath's concentration, pH and temperature. When needed, it makes additions of nickel and hypophosphite replenishers and neutralizers to keep the solution within the proper operating range. It also keeps a record of the bath and its age, and the volume of chemicals used and remaining. These records can be used to track costs and profitability.

In addition, its analyses can be transmitted to a personal computer by RS-232 serial communication. With proper software, the data can be analyzed to provide statistical process control and product certification. The controller also has user programmable audible, high and low level alarms to alert the operator to out-of-limit conditions.

The Model 3300 contains a custom designed, microprocessor to allow close control, maximum flexibility, advanced record keeping, and statistical data handling. It is very user friendly. It prompts the operator to enter any required information. Set points, alarm levels, bath volume, concentration and age, and sampling and addition times are all adjustable. The user can easily change them to account for changes in bath chemistry or volume.

The Model 3300 electroless nickel controller features several new technologies for electroless nickel control like

custom programmable pH ramping set points based on bath age. Colorshift™ technology to allow the unit to self learn the color changes in the bath as it ages to reduce to number of calibrations. Built in database with previous analysis lookup at the unit.

Contact Palm Technology for more information about the ENControl Model 3300.

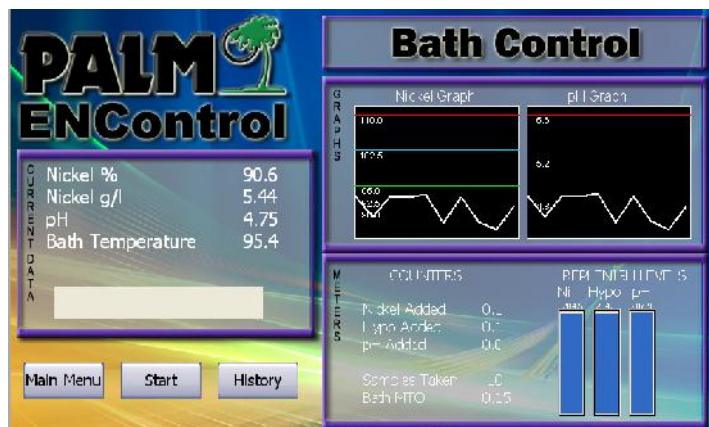


### the **Key Features**

- Analyzes nickel metal, pH and temperature
- Automatic replenishment
- 7 inch widescreen touchpanel
- Configurable audible alarms
- Colorshift™ technology
- pH Ramping technology
- Built in graphing
- Full internal datalogging
- Nickel Save™ technology

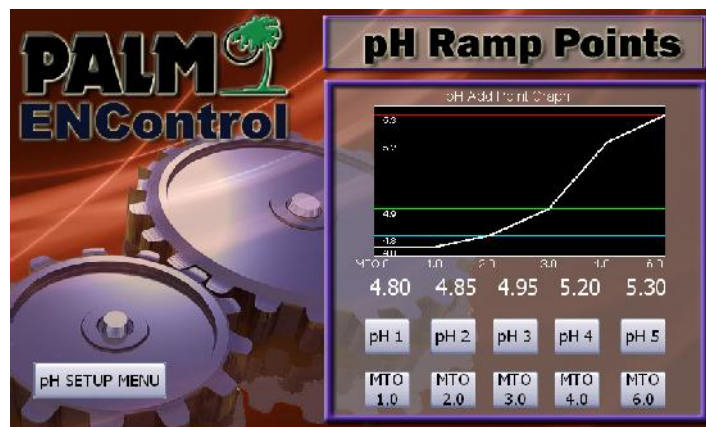


# FEATURES OF ENControl Model 3300



## MAIN CONTROL SCREEN

- On screen graphing for Nickel and pH
- Inventory levels of replenishers
- History of replenishments made and bath MTO
- Constant display of last analysis
- History lookup of last 50 samples



## COLORIMETER AND PH

- Custom pH ramping technology allows up to five pH setpoints to track to five MTO setpoints
- Colorimeter incorporates COLORSHIFT™ technology which compensates for the natural color changes in the bath that occur due to bath age.
- Nickel Save™ allows you to set a metal turn over point to reduce the Nickel Setpoint. This saves nickel by not disposing a 100% concentrated bath.



## INTERNAL DATABASE SUPPORT

- Internal database memory keeps the data from the last 50 control cycles. The user can cycle through them during a control cycle or look them up at any time.



## MAIN CONTROL SCREEN

- 7 inch wide screen touchpanel creates an easy to use interface for all operators. Every menu item is clearly labeled.
- All inputs into the controller are compared for accuracy, the system will alert the operator if they enter a parameter that is out of range.