

P5128 Electroless Nickel Controller

For electroless Nickel plating process



Product Features

- Based on a 24-bit high resolution A/D converter
- Automatic sampling analysis
- Photometric method for determining Nickel concentration in plating bath
- Measuring cycle time adjustable
- Lamps for status alarm & failure alarm
- 2-stage abnormal & shutdown alarm
- Self-diagnosis & friendly calibration setting
- Highly stable and accurate with wide measuring range
- 4.3" LCD color touch panel display
- Reagents free and cost saving
- Graphical interface easy to operate and understand
- Language support in English and Chinese
- Automatic data storage with capacity up to 5000 historical records. (User could expend memory by using 32/64GB flash disk.)

Application

In the electroplating industry, nickel sulfate solution is the main raw material for nickel electroplating and chemical nickel plating. The solution is dark green color. The absorption of the solution depends on the concentration. The P5128 Electroless Nickel Controller is designed for monitoring the nickel-plating bath at all times, available to ensure that when the nickel concentration and/or pH fall below their pre-set values, Equipped with an automatic pump which accurately supplement the amount of dosing whenever might be required and maintains the optimal pH value of concentration in anytime.

Operational Principle

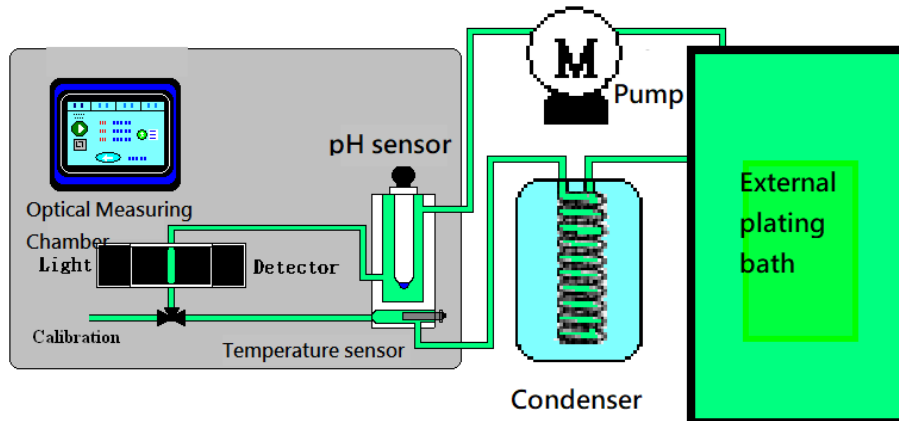
P5128 Electroless Nickel Controller has an on-line photometer, pH meter and an external temperature sensor in the plating bath. The Nickel ion (Ni²⁺) electrolyte solution can absorb the light from specific wavelength of LED lamp. Following Beer-Lambert Law, it can determine Nickel's concentration. Accessing with pH electrode in the measuring loop can give accurate date and provide controller to execute auto dosing process.

When the nickel ion (Ni²⁺) electrolyte solution passes through the measurement cell, to identify the amount of nickel consist in the concentration, absorption of the light variation could be measured by the LED light wavelength. The result of the amount of nickel ion in concentration can be measured by the absorption of light at high and low points.

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Analysis Diagram



Feature

- ✓ Photometric method for determining Nickel. Use special Special LED with photodiode receivers
- ✓ Easy to maintain and operate and replacement is simple with low cost.
- ✓ Continuous monitoring and control of Nickel concentration, pH and temperature
- ✓ With self-diagnosis function. With EMI protection, to ensure our device free away from other electronic noise that may cause interference.
- ✓ With special designed temperature control measuring cell, increases the stability of the measurement.
- ✓ 5 connection points for supplement for Nickel dosage and pH solutions
- ✓ Use a condenser to cool down the heat of Nickel sample, to protect the mechanical parts from overheating

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Specification

| | |
|--------------------------|---|
| Function | Nickel concentration, pH, temperature monitor and control for electroless Nickel plating process |
| Model | P5128 |
| Installation | Wall mount Type |
| Housing | IP65 |
| Dimensions | H600*W400*L250mm |
| Range | Ni+ : 0.1- 10 g/L, 0- 14 pH, 0- 100 |
| Accuracy | ±3 % of F.S. Range |
| Repeatability | ± 0.01 g/L |
| Measurement Mode | User-selectable 30 seconds to 30 minutes per measurement. |
| Data Log | Simultaneously display parameters of Nickel, pH, temperature, and analysis status, nickel usage cycle, nickel adding volumes. |
| Auto-dosing | 5 connection points for supplement for Nickel dosages and pH solutions |
| Shutdown Alarm | Abnormal detection of concentration, pH value and temperature (adjustable of high and low-point) |
| Light source / detector | Special LED with approx. 3 years of life span. Photodiode |
| Calibration | 2-point manual calibration, high point and low point. |
| Principle | 24 bit Single Chip Controller; high integrated SMD Technology, 24 bit AD-Converting. Signal filtration, simulation of the stability of wiring |
| Display | 4.3" LCD color touch panel display |
| Self-Diagnosis | The system is continuously self-diagnosis. The error management helps to identify problems. (Display errors and save historic data) |
| Sample Conditions | <ul style="list-style-type: none">• Sample temperature: a condensation device is equipped to cool down the sample and control temperature under 40 °C• Sample flow: Continuous, 25 to 230 ml/min• Sample connection: use external pump• Suspended solids: 200 micron or less |
| Environmental Conditions | <ul style="list-style-type: none">• Ambient operating temperature: 0 – 40 °C• Ambient operating humidity: Up to 95 % RH non-condensing |
| Electrical Conditions | Power supply ranges:115 / 230 VAC, 50 / 60 Hz · < 500 Watt |
| Analog Outputs | 1 isolated current output, 4-20mA Range. With option of RS485 |
| Alarms / Relay outputs | 8 relays: <ul style="list-style-type: none">• 1 sampling control relay• 1 analysis alarm relay• 1 failure alarm relay• 5 connection points for fully user-assignable relays |