



## Project Profile: Plant Automation Projects

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### COMPANY

Eckart America L.P.  
4101 Camp Ground Road  
Louisville, KY 40211

### PROJECT TITLE

Paste Plant Automation Projects

### SERVICES PROVIDED

- Control system design, purchase of all control system hardware, control panel assembly, hardware and software configuration, software design, programming and start up.

### HARDWARE

- Dell Server, three workstations, eight Siemens S7 PLCs, over 30 VFDs, 13 scales and additional remote I/O racks.

### SOFTWARE

- Siemens Step7, Simatic Softnet S7, Wonderware Intouch 7.1 with scripting extensions, I/O server, Windows NT Server and Workstation, Microsoft Office.

### OBJECTIVES

- To install a new SCADA system.
- To ensure that Eckart America L.P.'s other manufacturing processes will not suffer during the construction of the paste plant.
- Provide for future easy expansion of the paste plant system.
- To be able to control all of the paste plant systems from a central control room.
- To convert process operator's role from manual labor to a process monitoring professional while reducing the number of required process operators.
- To develop a better understanding of the manufacturing process through the comprehensive gathering and real time interpretation of data.
- To be able to easily introduce future process improvements that will reduce costs and improve product quality.

### PROJECT DESCRIPTION

Design and installation of new process control and automation systems for Eckart America L.P.'s seven pigment paste manufacturing processes. Increase in demand for higher quality products necessitated new and highly automated process equipment to minimize operator intervention while yielding better quality products with accurate tolerances.

### TECHNICAL DETAILS

Two separate networks connect the paste plant systems. A Profibus network is used for communicating control data to all PLCs, VFDs and Scales, and an Ethernet network transfers process information to the server and workstations. Each PLC is a gateway between the two networks.

Using IEC standards for developing control logic, Pfeiffer Engineering provided a control system that offers expandability, simplified system startups and maintenance. Over one hundred HMI screens were developed for GUI, batch recipe management, trends, loop controllers, alarms, interlocks and equipment control.

Siemens S7 PLCs were integrated into the individual processes and common plant process equipment. All VFD controls are through Profibus. All scale data is communicated to the PLCs via Profibus. To assist operations, full interlock listings with active status are available when devices are selected.

Use of IEC611-32 programming standard provides for ease of batch and recipe control. HMI software allows for development and storage of recipes for future download to individual PLCs. Domain server provides system security needed for reliable service.