

Female Terminal Inspection System (FTIS)

Client: A Manufacturer of Automotive Electrical Connectors

Technologies Integrated

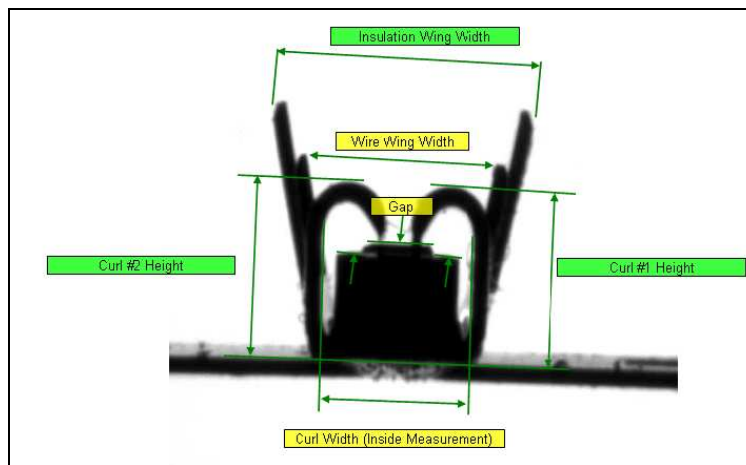
- National Instruments Compact Vision System (CVS) and Vision Builder for Automated Inspections software (VBAI).
- High resolution camera

Background

Our client currently uses multiple laser sensors to inspect dimensional quality of formed electrical terminals. The discrete laser sensors have proven unreliable. Performance Automation was contracted to retrofit the existing inspection system with machine vision.

Project Scope and Deliverables

Performance Automation (PA) designed a machine vision system to perform quality measurements on each terminal, without fail.



The FTIS is capable of measuring up to 700 parts per minute, and interact with existing cutter mechanisms, similar to the method used by the now obsolete measurement system.

The FTIS System basic operator interface includes:

- The part currently being inspected.
- Overall Pass/Fail of each inspection.
- Individual Measurement Pass/Fail.

The delivered hardware features a telecentric lens, camera resolution of 1600 x 1200, capable of exceeding +/- .05 mm, and a long life LED backlight (over 30,000 hours of on-time), which was designed by PA. Other hardware features included mounting brackets for the camera and backlight to the existing frame. The FTIS also includes a 15" Flat Panel Monitor.

An additional feature offered was internet support and connectivity to the FTIS vision processor. Plus help notes to identify troubleshooting techniques to aid the operator in identifying probable causes for false failures.