



Roll-to-Roll Application Uses a Custom Metrology Solution to Measure Thickness Profiles

Conversion Technologies International (CTI) is a contract coater and laminator, dedicated to providing hot melt and water-based adhesive coatings, lamination, slitting, and die-cutting services using state-of-the-art techniques and equipment. They were in need of a customized hardware and software package to acquire, control, and analyze product thickness data utilizing laser displacement sensors.

Challenge

A uniform thickness profile is critical in coater conversion processes in order to provide a quality end product. CTI's existing in-house metrology system encountered run-out errors that resulted in faulty thickness profile data. The software interface was also difficult to use, and historical data analysis was not possible. CTI needed a solution that fulfilled specific design requirements, including custom inputs that enabled users to tailor the charts based on the product they were running.

Solution

Product development and software engineers from k-Space worked with CTI to provide a custom metrology system that met all of their requirements. The specialized software provided a solution to the run-out errors by including a gauge runout routine. The system incorporated equipment already provided by CTI, as well as new hardware triggering, cabling, and control hardware and software.

Results

k-Space engineers successfully installed the metrology system and provided on-site training for the operators. Operators were pleased with the flexible user interface that allowed selection of which adhesive product to monitor, scaling of thickness charts, and on-the-fly statistical analysis. Subsequent software updates were implemented quickly via remote log in.

Steve Smith, Process Engineer at CTI, stated, "k-Space's two part installation procedure was efficient and did so with insignificant downtime to production. The software requirements were discussed in the beginning phase of the project for a clear understanding of the desired product. After the hard install was complete, only minor changes occurred to the software to tailor to CTI's needs that were implemented remotely. Overall, this was a smooth project to manage."



CASE STUDY:

Conversion Technologies International

CHALLENGE

Outdated technology in the plant created a need for a custom metrology system to measure thickness profiles using laser displacement sensors.

SOLUTION

k-Space developed a custom metrology solution that included hardware triggering and alarms, operator-friendly software, and full database capability with an operator-friendly interface.

RESULTS

- Prior software run-out errors were eliminated.
- Accurate, real-time thickness profile readouts enabled operators and management to make quick decisions during the product run.
- Thickness profiles are stored in a local database for future review and analysis.