



## Case Study

# Making High Speed Offset-Quality Inkjet Printing a Reality

### Company

Eastman Kodak  
Company

### Industry

High-speed digital inkjet  
printing systems

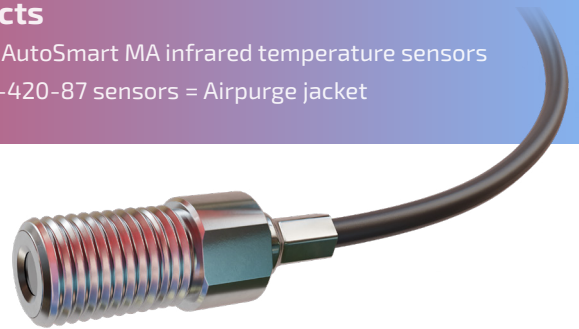
### Products

Exergen AutoSmart MA infrared temperature sensors  
ACE 250-420-87 sensors = Airpurge jacket

**Traditional inkjet printing can produce high quality output but, compared to offset printing, it is relatively slow. Kodak, the world-renowned printing technology company, set out to change this. By precisely monitoring the ink drying process across multiple heating zones, it was able to dramatically increase production speed – reaching 150 meters per minute with offset-like quality. And all at the industry's lowest cost per sheet.**

### Challenges

Water-based inks dry slowly because moisture absorbs heat energy during evaporation. Then, once dry, the substrate temperature will rise rapidly under constant heat. Detecting this precise transition point was essential for Kodak to maximize printing speed while maintaining quality. Under-drying would cause smearing in post-processing; overheating would impact color quality and could even create a risk of fire.



## Solutions

To enable real-time process control at the production speeds required demanded accuracy ten times higher than conventional sensors were able to provide. Initially, Kodak deployed Exergen AutoSmart micro temperature sensors with Airpurge. Using Speed-Boost methodology, the system combines surface temperature data with heat balance equations to accurately calculate internal substrate temperature at speed. More recently, Kodak has adopted the CleverIR ACE 250-420-87 sensors which deliver the same – or even better – performance.

## Benefits

Real-time monitoring enables precise drying control at previously impossible speeds for quality inkjet printing. Exceptional accuracy prevents under-drying and over-heating, eliminating waste from defects. ACE is very robust and durable and will provide reliable performance without the need for field calibration. Custom calibration maintains measurement stability across varying substrates, ink coverage, and ambient conditions. With  $\pm 0.1^{\circ}\text{C}$  repeatability error, replacement sensors install as drop-in replacements requiring no programming or recalibration.



*ACE 250-420-87 sensors provide the accuracy, reliability, and real-time monitoring needed to optimize drying at previously impossible speeds*

## Results

Kodak achieved production speeds of 150 meters per minute with quality that matches offset printing standards. Smudging and bleeding on glossy paper with heavy ink coverage which had previously dogged high-speed inkjet printing were eliminated. Quality improvements also dramatically reduced waste to deliver the industry's lowest cost per sheet, making quality inkjet genuinely competitive with offset printing for high-volume production.

## Conclusion

This revolutionary system demonstrates how advanced sensor technology enables breakthrough industrial performance. ACE 250-420-87 sensors from CleverIR provide the accuracy, reliability, and real-time monitoring needed to optimize drying at previously impossible speeds. Success in achieving offset-quality at 150 meters per minute with lowest industry cost proves precision thermal management is essential for next-generation printing. Maintenance-free operation and exceptional stability make these sensors ideal for many high-speed environments where quality and efficiency cannot be compromised.