TDK SensEI

USE CASE

Packaging and Labeling Machine Monitoring

edgeRX™ by TDK SensEI | Predictive Maintenance using Edge AI

OVERVIEW

Packaging and labeling machines are critical to distribution center operations, ensuring accurate order processing, compliance, and shipment readiness. These systems operate at high speeds and directly impact throughput and customer satisfaction. TDK SensEI's edgeRX™ enables predictive maintenance and continuous monitoring by combining edge sensors, AI-driven analytics, and real-time alerts—helping operators maintain reliability, accuracy, and operational efficiency.

PROBLEM

Packaging and labeling systems rely on motors, rollers, conveyors, applicators, and print mechanisms that operate continuously under high throughput demands. Over time, wear, misalignment, and mechanical stress can lead to performance degradation or failure.

Key operational and financial challenges:

Unplanned downtime: Machine failures disrupt packing lines and delay shipments

Throughput loss: Slower or inconsistent operation impacts fulfillment speed

Labeling errors and rework: Faulty systems can create compliance and quality issues

High maintenance costs: Reactive repairs and manual inspections increase expenses

Limited visibility: Lack of real-time insight into asset health across distributed systems

EXPECTED OUTCOMES

By implementing edgeRX™, distribution centers can transition to predictive maintenance while improving both operational efficiency and quality.

Illustrative ROI outcomes:

20–40% reduction in unplanned downtime through early fault detection

10–25% reduction in maintenance costs via condition-based servicing

Reduced labeling errors and rework costs by maintaining consistent machine performance

Increased throughput and fulfillment speed through reliable packaging operations

5–15% energy savings from optimized equipment performance

SOLUTION

TDK SensEI's edgeRX™ provides a comprehensive machine health monitoring platform that transforms packaging and labeling equipment into smart, connected assets

How edgeRX™ drives fault detection and ROI:

Continuous monitoring: Sensors capture vibration and temperature data across motors, rollers, and labeling mechanisms in real time

Edge AI analytics: Local processing enables rapid detection of anomalies such as imbalance, wear, or misalignment

Predictive insights: AI/ML models identify subtle performance changes that signal early-stage faults

Actionable alerts: Real-time notifications allow maintenance teams to intervene before failures or quality issues occur

Centralized visibility: Dashboards provide system-wide monitoring, performance analytics, and trend tracking

Low-touch deployment: Out-of-the-box architecture reduces setup time and accelerates time to value

SUMMARY

TDK SensEI's edgeRX™ transforms packaging and labeling machine maintenance into a proactive, ROI-driven strategy. By combining continuous monitoring, edge AI analytics, and real-time alerts, edgeRX™ enables early fault detection, reduces downtime, minimizes errors, and ensures high-performance packaging operations—delivering measurable business value across distribution centers.

edgeRX™