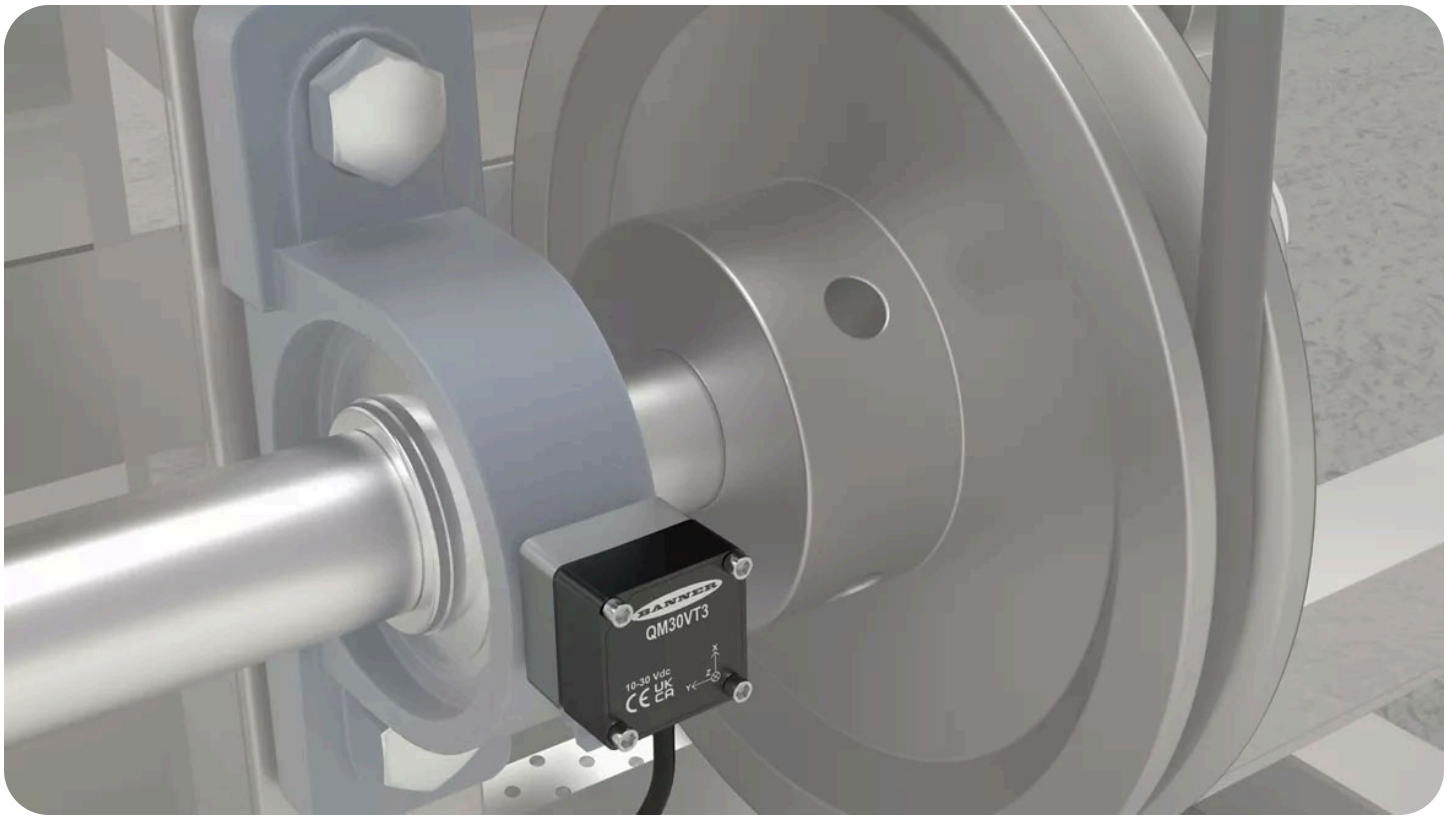
Detect Signs of Gearbox and Bearing Failure in Conveyor Motors with 3-Axis Vibration Monitoring



Challenge

In spite of routine vibration spot checks, a busy package sort facility was experiencing conveyor motor failures that were shutting down lines without warning, leading to costly downtime and emergency repairs. Maintenance teams had many assets to monitor across the facility, and manual spot checks could only capture a snapshot in time. The high demands placed on the motors meant that faults could develop and escalate rapidly between inspections. As a result, failures often progressed unchecked until maintenance teams were forced into reactive maintenance, addressing issues only after they had already caused disruption and expense.

When spot checks did reveal abnormalities, determining their severity required a specialist. Bringing in an outside expert was costly, and internal teams lacked the tools to confidently assess whether immediate intervention was needed. As a result, decisions were often delayed, sometimes leading to unnecessary inspections and other times allowing failures to progress unchecked.

Without a simple, cost-effective way to automate fault detection, the facility remained stuck in a reactive maintenance cycle, dealing with failures only after they had already caused costly downtime and emergency repairs.

Solution

The package sort facility worked with Banner to implement a monitoring system that would eliminate blind spots in vibration detection and provide maintenance teams with early, actionable insights. Banner recommended the QM30VT3 High-Performance 3-Axis Vibration Sensor with built-in VIBE-IQ, replacing manual spot checks with continuous, automated monitoring.

With VIBE-IQ built into the sensor, it establishes baselines and sets warning and alarm thresholds based on actual machine behavior. When a threshold is exceeded, the sensor triggers an alert, giving maintenance teams immediate notice of early-stage faults, such as bearing wear, misalignment, and other mechanical issues, allowing them to respond before minor issues escalate into costly failures.

Rather than relying on periodic checks and getting caught reacting to late-stage symptoms, the QM30VT3 gave the maintenance team the ability to shift from reactive to predictive maintenance. With the QM30VT3 providing continuous monitoring of a machine's baseline health, they were able to plan interventions for the right time, optimizing inspections, reducing unplanned downtime, cutting emergency repair costs, and improving overall system reliability.

Featured Product

QM30VT3 3-Axis Vibration Sensor

QM30VT3 3-Axis Vibration Sensor with VIBE-IQ machine learning enables predictive maintenance, real-time alerts, and Modbus integration to prevent downtime.