

edgeSV
NTEK SYSTEM

USE CASE

Lifts & Vertical Conveyors

SV500 by NTEK SYSTEM | ESA-based Motor & VFD Predictive Maintenance

OVERVIEW

Inter-floor conveyors run short cycles with frequent starts and stops. SV500 compares current and load per cycle to screen for rising mechanical resistance and drive-train degradation.

PROBLEM

A stopped inter-floor conveyor blocks material flow on both floors.

Key challenges:

- **Inter-floor transport stops** — When a lift or vertical conveyor stops, a bottleneck forms and affects connected processes.
- **Gradual motor wear** — Early degradation may appear in current and load patterns before noise or temperature changes.

EXPECTED OUTCOMES

Inspect units with abnormal trends first to reduce transport bottlenecks.

Expected benefits:

- **Prevent bottlenecks** — Check units showing abnormal trends first.
- **Catch wear early** — Track wear progress through long-term trends in the same phase.
- **Maintenance priorities** — Compare health grades across equipment on one common basis.

TARGET EQUIPMENT

Freight lifts/hoists | Vertical conveyors | VFDs & reducers

SOLUTION

01 VFD Status Diagnostics

Analyzes the VFD input/output voltage and current waveforms to identify faults in rectifier diodes, DC-link capacitors and switching devices (SCRs or IGBTs). Also monitors power-supply condition and power quality.

02 Motor Status Diagnostics

Analyzes motor voltage and current without additional equipment-mounted sensors. Screens mechanical issues (cavitation, soft foot, bearings and vibration), electrical issues (stator, connections, heat and noise), and load fluctuations.

03 Power Quality Status Diagnostics

Learns normal power-quality patterns and evaluates real-time deviations. Tracks voltage, current, interruptions, sags and harmonics to identify abnormal conditions.

04 Edge AI Server

Performs diagnostic analysis directly on SV500. Built-in storage (8GB eMMC and up to 256GB SD) retains waveforms and diagnostic data. Its web interface shows real-time values, equipment status, power quality, alarms, events and reports.

Operational Impact of edgeSV

Continuous monitoring and early detection support availability, maintenance and energy efficiency.

20–40%	10–25%	5–15%	10–20%
Unplanned downtime	**Maintenance cost**	**Energy savings**	**Equipment life**

Illustrative ranges only; not verified SV500 performance. Actual results depend on equipment, site conditions and corrective actions.