

edgeSV

NTEK SYSTEM

USE CASE

Quality Degradation

SV500 by NTEK SYSTEM | Early Warning of Equipment Condition Drift

OVERVIEW

Product quality loss often begins as equipment condition slowly drifts. SV500 uses Electrical Signature Analysis (ESA) to compare motor load and power quality against a learned baseline and flag changes early.

PROBLEM

Small equipment changes can precede quality degradation.

Key challenges:

- **Slowly developing drift** — Gradual equipment changes are often noticed only after defects appear.
- **Linking cause and effect** — Quality data and equipment-condition data are kept apart, making root causes hard to trace.

EXPECTED OUTCOMES

See equipment condition changes before quality problems appear.

Expected benefits:

- **Early warning** — Screens load changes that depart from the learned baseline.
- **Root-cause support** — Change timing can be compared with quality records.
- **Pre-emptive checks** — Narrows what to inspect before defects spread.

TARGET EQUIPMENT

Production drives | Drive motors | VFD | Power equipment

SOLUTION

SV500 compares motor load and power quality against a baseline.

How SV500 diagnoses:

- **Motor load deviation** — Tracks whether current and power slowly leave the learned normal range under the same product and speed.
- **Power quality variation** — Logs voltage imbalance, harmonics and voltage events to compare with when quality varied.
- **Change timestamps** — Keeps status grades and event times so they can be compared with MES and SPC quality data.
- **Adaptive thresholds** — Machine learning learns each asset's normal condition and judges its status with load-dependent adaptive thresholds, rather than fixed limits.
- **Web dashboard and integration** — Check diagnostic status in real time on the device's built-in web dashboard without a site visit, and connect to higher-level systems such as BMS or SCADA over Modbus TCP/RTU. Additional interfaces such as MQTT depend on the project configuration.

SUMMARY

SV500 gives early warning of equipment condition change; it does not measure product quality. Quality judgment still relies on the line's SPC/MES data and inspection results.

edgeSV