

ABB Ability™ Performance Optimization for LV Drives

Identify opportunities to improve drives system performance



ABB Ability™ Performance Optimization for LV Drives service identifies, classifies and prioritizes opportunities to optimize low voltage drives performance, and reduces the risk of drive system failure. The service uses automated data collection and analysis to quickly identify issues and ensure optimal equipment and process performance.

Benefits

- Better informed decision making
- Faster problem identification
- Improved performance
- Long-term drive health
- Increased productivity
- Lower risk of failure
- Higher availability
- Greater efficiency
- Repair avoidance
- Reduced costs

Features

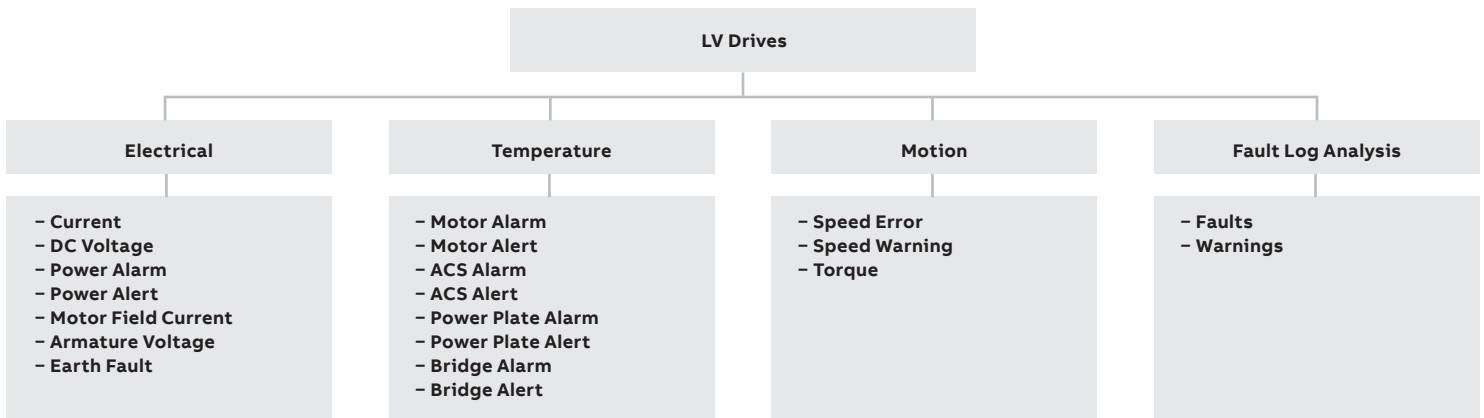
- Biannual analysis by ABB experts to identify issues
- Configurable alerts via e-mail
- On-site or remote access for customer and ABB service
- Statistical analysis of drives data
- Remote diagnosis and proactive support from ABB experts
- Consolidation and long-term storage of drive data
- Multiple drive monitoring in the same network
- Automated analysis of faults and alarms
- Continuous performance monitoring
- Secure communications

Overview

Performance Optimization for LV Drives service is a monitoring and diagnostic service that tracks the health and performance of low-voltage drive systems. This service collects data from low-voltage drives - including motor current, motor temperature, speed error and DC voltage - and calculates key performance indicators (KPIs) that measure drive conditions for a specified period of time.

Drive failure can halt production

Find performance issues before they escalate



01 ABB service engineers use Performance Optimization for LV Drives to analyze multiple key performance indicators (KPIs) for drives systems and provide a prioritized list of potential problem areas.

02 ABB's service delivery platform provides different views of data to help ensure accurate analysis. For instance, users can view Drive KPIs and corresponding signal data to better analyze the results.

Scheduled monitoring and analysis to diagnose issues

Performance Optimization for LV Drives service conducts automatic, periodic calculation of KPIs and fault data analysis for drives, evaluating extended periods of data rather than just snapshots. The service monitors multiple drives located on the same network and tracks the status of all drives together. The service also allows for storage of drives data and KPIs, which can be retrieved and charted to visualize drive health and performance over time.

More accurate diagnosis with configurable KPIs

Performance Optimization for LV Drives service calculates KPIs by comparing these signals to thresholds specified for each motordrive combination:

- **Electrical:** motor current, DC voltage, power, earth faultcurrent
- **Temperature:** motor temperature, inverter temperature
- **Motion:** speed error, motor torque

Clear view of data and analysis

Access and visualization of KPI data is provided through an easy-to-use interface that shows three separate views of the data:

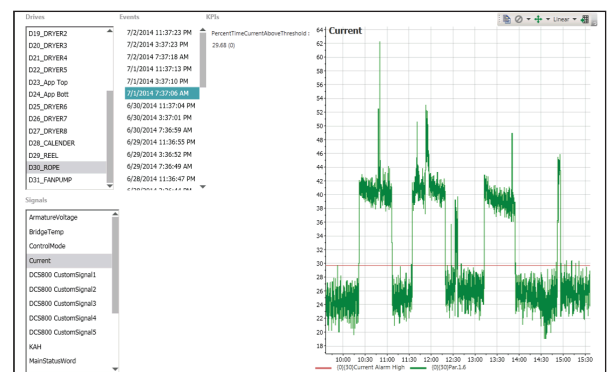
- **View:** Raw data allows customer and ABB service experts to view data associated with the drive health and performance
- **Scan:** KPI analysis presents a summary of KPIs, ranked by severity, that are outside set limits
- **Track:** KPI monitoring empowers users to specify rules for KPIs and displays each occurrence that falls outside a threshold

Fault analysis to reduce risk

The service also performs an analysis of fault data to identify the most commonly occurring faults and their duration so that faults can be diagnosed.

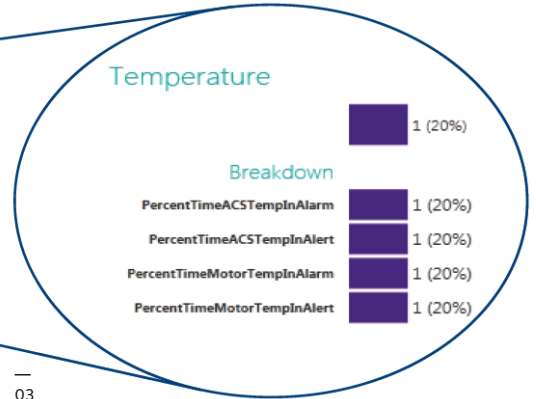
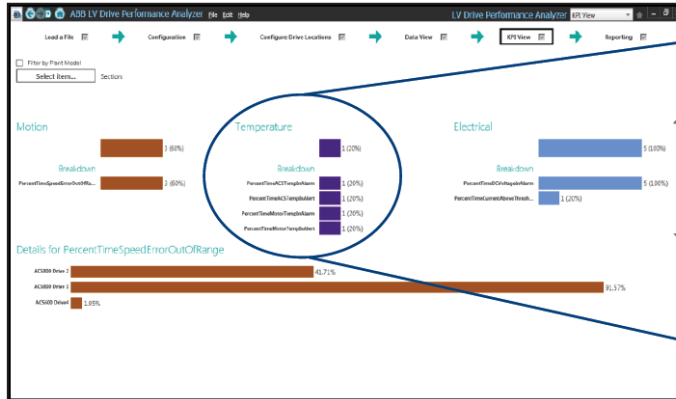
Expert analysis helps predict potential failures

To ensure that the performance and health of drives are optimized, ABB provides periodic performance analyses. ABB experts evaluate gathered data to assess the health and performance of drives system, determine the statistical accuracy of the KPIs, and find trends that predict potential failures. Diagnostic data is collected for each drive, and the data are evaluated by comparing measurements to limits specified for each drive-motor combination. The resulting expert performance report lists recommended actions to optimize system performance.



Advanced Digital Services are available for:

03 Three different views of KPIs are accessed through the interface. The above example shows the KPI analysis view for temperature. The display only shows the KPIs that are outside their threshold and prioritizes them: the bigger the bar, the greater the need to address the KPI.



03

Assets

1. Control systems
 - 800xA
 - Advant
 - Freelance
 - Harmony
2. Low-Voltage drives
3. Mine hoists
4. Rotating machines

Processes

1. Control loops
2. Quality Control Systems (QCS)

Risk mitigation

1. Cyber security for control systems
2. Alarm Management for control systems

Critical notification when it matters most

To prioritize issues that require immediate action, site-specific rules are applied to targeted KPIs. Any KPI that tracks outside pre-determined parameters triggers an instant alert by email or text. This quickly notifies users about issues that can compromise system availability, so they can be addressed as soon as they are detected.

ABB Service Delivery Platform

ABB Service Delivery Platform is remote-enabled and provides a custom, secure connection to ABB services and experts. Deployed at a customer location, ABB Service Delivery Platform enables delivery of local and remote services, and provides both customers and ABB service experts a real-time view of KPIs and diagnostic and system data. Data collected from the service channel is highly secure as it remains on-site and requires user identification to view.

Secure connection for delivery of ABB services

04 ABB Service Delivery Platform connects ABB services with equipment and processes via on-site visits or remote connection. Users control access to the data collected and stored as well as to the control network.

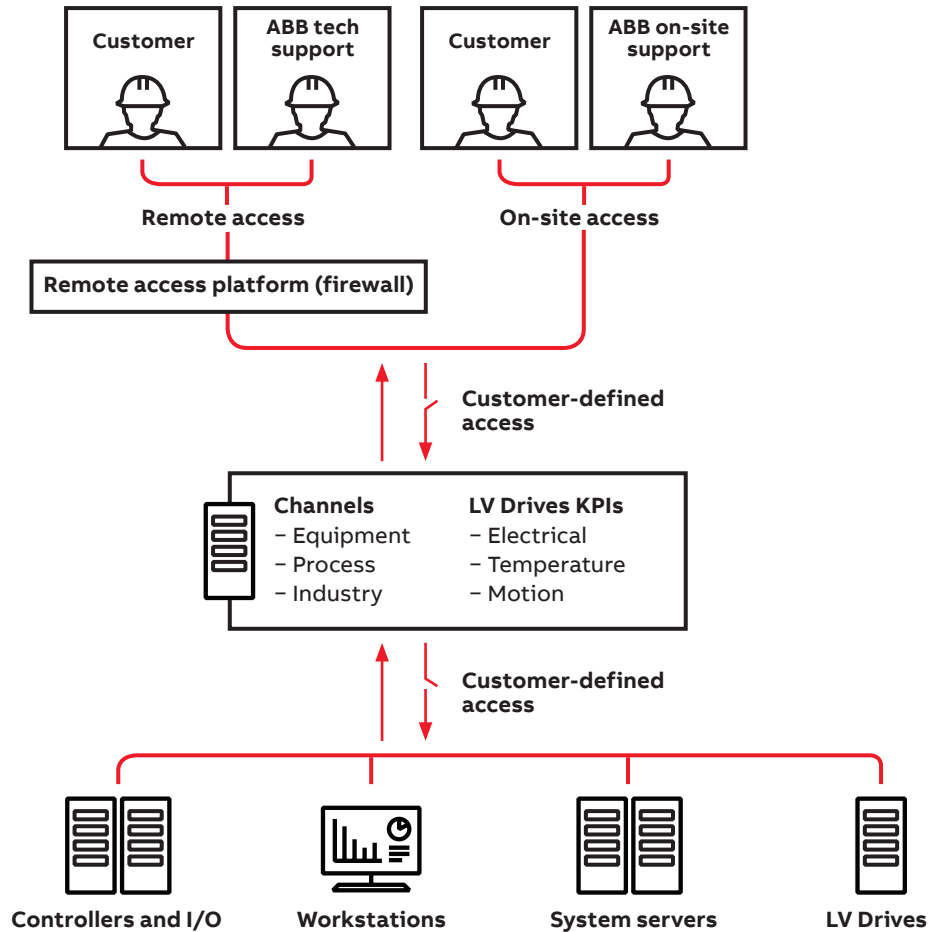


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