



DATASHEET

Quality SPC

Achieve Complete Manufacturing Quality Control

As manufacturing processes become more intricate, it is essential for companies to maintain flexibility, agility and efficiency to remain competitive. A vital approach to accomplish this is through digital transformation of quality management processes because the quality of produced products is fundamental to the success of any manufacturing business.

LOGICAL SYSTEMS Quality SPC app is a robust digital quality system that empowers manufacturers to navigate complexity and meet the most demanding standards. Manufacturing high-quality products at a competitive price requires a team effort. LOGICAL SYSTEMS Quality SPC app is a versatile collaborative decision making tool which connects the entire quality team with real-time Statistical Process Control (SPC) information. This enables the exceptional collaboration of team members to proactively reduce process variations instead of just reacting to them. With real-time SPC data, the app can help resolve problems before quality issues start costing time and money.

The Quality SPC app is a transformative quality system that integrates shop floors to business applications. The app not only supports consistent production of high quality products but also sustainably reduces costs while enhancing manufacturers' customer satisfaction.

Summary

Guarantee the timely and precise collection of statistical process control (SPC) data consistently by leveraging the robust capabilities of the LOGICAL SYSTEMS Quality SPC app for Ignition®. Implementing SPC resolves or minimizes issues such as delayed or absent sample collection, inaccurate sample data and other factors that contribute to quality concerns. Achieve complete manufacturing quality control by providing SPC data to the appropriate stakeholders in real-time through adaptable control charts and analytical tools. The Quality SPC app supports all quality-relevant processes on the shop floor, from production and inspection processes to corrective actions for deviations.

Bring Product Quality Under Control

The Quality SPC app provides manufacturers with the capability to monitor process variations in real time, a vital indicator of product quality. By employing robust Statistical Process Control (SPC) analysis methods, operators and factory managers can make prompt online adjustments to proactively safeguard production quality and consistency.

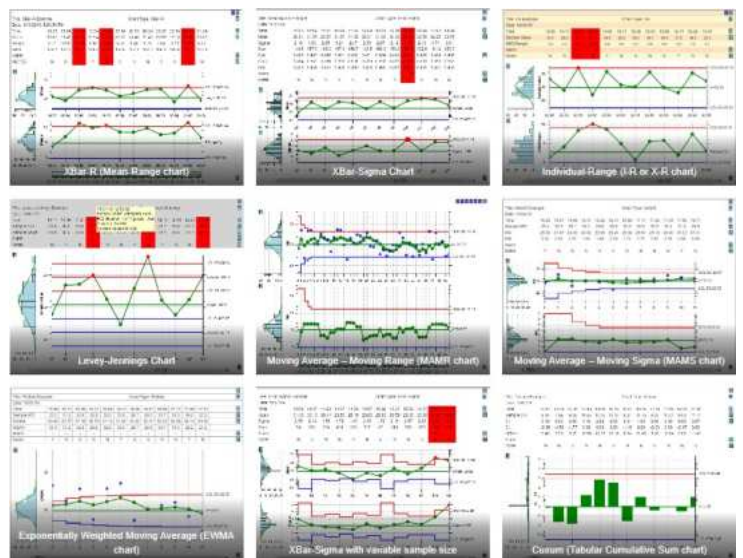
This software supplies production teams with the necessary quality information and alerts to modify process parameters instantly, which helps in reducing costs and enhancing product quality. Unlike traditional offline SPC systems that depend on historical data and do not facilitate real-time corrections for process deviations, Quality SPC app can harness historical data from various sources within the plant. This feature allows manufacturers to convert typical process data into actionable insights. The software can swiftly analyze data, illustrate variations, and provide valuable information regarding the performance of essential plant processes.



Enable Your First Line of Defense

Operators are the first line of defense in ensuring product quality within a plant. However, they require software solutions that do not interfere with their operations. The Quality SPC app can be configured with ease to supply operators with real-time Statistical Process Control (SPC) information, enabling them to visualize and manage product quality effectively.

This SPC data can be tailored to suit the individual needs of each user, minimizing the learning process and resistance when implementing a real-time SPC system. The Quality SPC app provides operators with the critical quality information they need in real-time, positively influencing both product quality and the plant's profitability. This enables operators and plant decision-makers to track vital process parameters, thereby allowing for proactive management of product quality and plant efficiency. Alarm dashboards can be tailored to address the distinct informational needs of each user.



The SPC Module, developed for the Ignition® platform, enables effortless integration with the complete suite of LOGICAL SYSTEMS applications.

Extensive Array of SPC Charts

Accompanied by Robust Statistical Tools

The Quality SPC app automatically evaluates real-time process data against statistical rules to identify trends, runs, patterns and anomalies. When a rule is violated, the software instantly marks the corresponding data point in red. It also features customizable alerts that informs whenever critical data deviates from established specifications, allowing for immediate resolution of quality issues.

The app automatically calculates SPC control limits using historical data for the supported variable control chart and attribute control chart types. Alarms can be generated for standard +3 sigma control limits, or standard SPC rule sets (WECO, Nelson, Juran, Hughes, Gitlow, AAIG, Westgard and Duncan). Alarms can be color highlighted in the SPC charts and table. It will also calculate process capability ratios (Cp, Cpl, Cpu, Cpk and Cpm) and process performance indices (Pp, Ppl, Ppu and Ppk). Users are able to interact with charts: adding annotations, defining custom tool-tips and editing notes.

The Quality SPC app integrates seamlessly with Inductive Automation Ignition® Alarm Management, to send email or SMS notifications to recipients, ensuring that alarm information is communicated to when an SPC rule is violated. For example, upon detecting a rule violation, the software can send notifications. Critical information is always within reach, whether through a quick glance or an alert. A vast array of statistics can be showcased for the overall process or for individual process parameters, contributing to continuous improvement efforts. Limit sets enable easy comparisons between two data sets, streamlining process analysis.

All standard SPC charts are included:

- Variable Charts
- X-bar and Range or Sigma
- X-individual and Moving Range
- Moving Average and Range or Sigma
- Cumulative Summation of Means or Individuals
- EWMA of Means or Individuals

Attribute Charts:

- p
- np
- c
- u
- Defects Per Million Opportunities (DPMO)

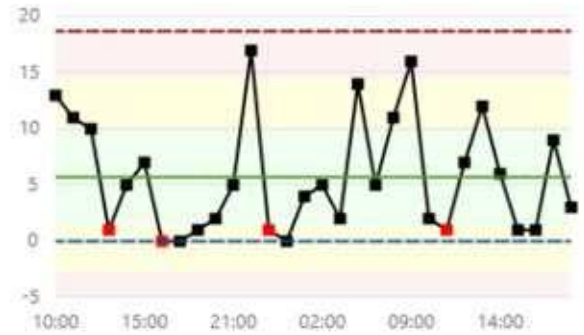
Special Charts and Analysis Tools:

- Run
- Histogram (view the data distribution)
- Scatter plot (view the correlation between characteristics)
- Pareto of Nonconformities, Causes, Actions or Rule Violations

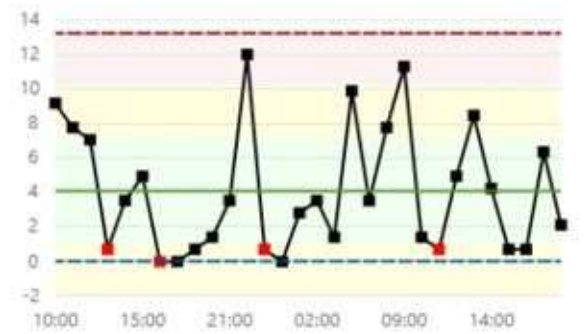
XBar (R)



Range



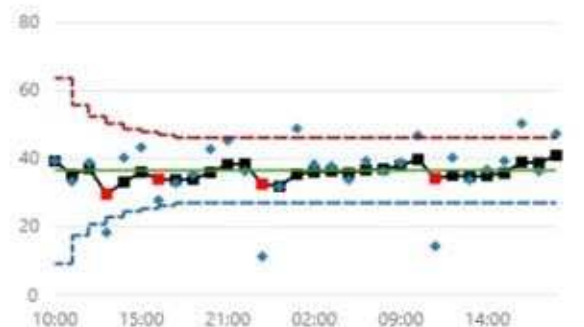
Sigma



Moving Average



Weighted Moving Average





Key Features and Benefits

Features

- Unlimited number of Sample Profiles, Charts, Tags, Data Sources and Rules can be configured
- A comprehensive suite of real-time and historical Statistical Process Control (SPC) charts with integrated alerting
- Extensive connectivity to various plant data sources
- Simple and responsive data entry interfaces including import
- Works well with mouse-driven workstations as well as touch-driven tablets and phones.
- Visual exception based deviation management
- Quick configuration of systems of charts
- Efficient engineering for large arrays of quality sample profiles and specifications
- Large variety of customizable SPC rules
- Robust background monitoring of process data with configurable notifications
- Advanced system administration capabilities

Benefits

- Easy integration with IT systems using centralized setup and security features
- Reduced scrap, rework and warranty claims
- Maximized productivity
- Improved resource utilization
- Increased operational efficiency
- Decreased manual inspections
- Improved client satisfaction
- Reduced Costs

Technical Requirements

System Requirements

Ignition® (8.1.+) Core Modules, Quad-core processor, 8GB RAM, 10GB free HD space

Supported Operating Systems

Windows Server 2016/2019/2022/2025, Windows 10/11, macOS (X, 10.16+), Linux

Supported Databases

Microsoft SQL Server, Oracle, MySQL, MariaDB, PostgreSQL, any database with JDBC driver

Supported Browsers

Chrome, Firefox, Safari, Microsoft Edge

LOGICAL SYSTEMS Quality SPC

The implementation of real-time monitoring notifies of potential issues ahead of time.

Increase throughput by streamlining processes with real-time insights.

Transform complex data with statistical treatments and into straightforward visual representations.



LOGICAL SYSTEMS
AUTOMATION & INTEGRATION SERVICES

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