

advenco Consulting GmbH is a full-service manufacturing IT provider, delivering high performance IT solutions to manufacturing companies.

The core competencies include production management (MOM, MES), production scheduling (APS) and data analysis and evaluation (EMI). A special focus is set on business processes that cannot be captured automatically. advenco provides mobile solutions to integrate manual processes in the overall manufacturing IT infrastructure

advenco is located in Giessen, Germany, operating in many countries around the world

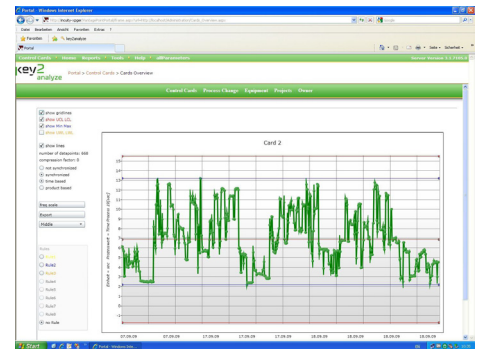


- Zero installation client
- Faster statistical analysis
- Easy creation and modification of control charts
- Quick overview of broken validation rules
- Improved quality control

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Web based SPC quality control chart



The quality control chart (QCC) or control chart is used for quality management purposes to analyze test data. The chart shows statistical samples over a time period in a graphical way. It consists of statistical variables like average value, warn limits and action limits of samples. Based on the characteristics of the graph, you can see anomalies and act immediately.

key2analyze is a highly flexible web based control chart for the statistical analysis of process values in production industries. key2analyze can be connected to almost every data acquisition system with OPC (DA, HDA) server or SQL databases.

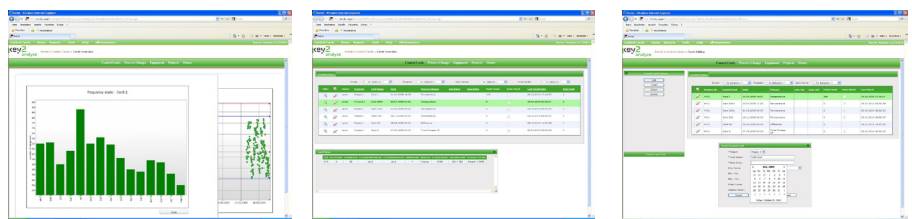
The analysis and the complete configuration can be done simply by using a web browser, the key2analyze frontend is a zero-installation client.

The administration of key2analyze allows e.g. to create, edit, delete, group or filter control charts. It can run up to 8 validation rules per control chart with variable K factors. An automatic check routine can be configured to run the checks automatically and periodically whenever necessary. The overview screen of the control charts will then show when limits were hit in a clearly arranged way.

Optionally it is possible to alert the user directly by email, when a validation rule is out of spec.

The graph shows different representations of the statistics, such as time based, product based, distributed sample view, frequency distribution view etc.

All important parameters of key2analyze can be set and modified within the application.



A direct connection to **Rockwell Automation's** manufacturing intelligence system **FactoryTalk VantagePoint EMI** allows easy access to all values configured, calculated and stored in the Rockwell EMI system. **The charts and the configuration are embedded in the VantagePoint portal.**

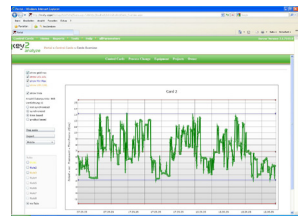
Production data analysis with quality control chart

key2analyze is a standard quality control chart for production processes with the main features

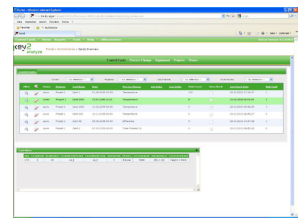
- Easy-to-use state-of-the-art control chart administration
- Grouping of control charts by projects, user groups etc.
- Allocation of process value changes to corresponding control charts
- Private and public charts
- Filters for control charts and process values
- Adjustable min/max value per control chart for tolerance checks
- Different selectable control chart views
 - Control chart with uniformed distribution
 - Time based view of the data points
 - Product based or time based x-axis
 - Visualization of the process value changes
 - Gauss frequency distribution view
- Show/Hide buttons for average value, alarm limits, control limits, min/max and grid
- Usage of check rules based on standard statistical rules "Western Electric" and "Nelson"
 - Automatical check of the rules with scheduler
 - Adhoc manual rules check
 - Overview of the control charts with broken rules with priority
 - Colored view of the broken rules in the chart
 - Show/Hide buttons for check rules
- Selectable compression factor for each control chart
- Selectable amount of values for each control chart
- Detailed tooltips with all relevant information for the values and the broken rules
- Exportfunctionality for Microsoft Word

SPC rules with variable K factor:

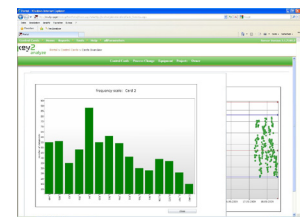
1. 1 point $> K$ Sigma
2. K points in a row on the same side of the mean
3. K points in a row, all continously increasing or decreasing
4. K points in a row, alternate in direction, alternate in direction, increasing and decreasing
5. K of $K+1$ points > 2 Sigma (same side)
6. K of $K+1$ points > 1 Sigma (same side)
7. K points in a row within 1 Sigma (both sides)
8. K points in a row > 1 Sigma (both sides)



Control chart with uniformed distribution



Control chart administration



Gauss frequency distribution

key2analyze supports production companies through...

- faster and easier observation of the product quality
- standardized analysis
- faster detection of trends and quality issues
- easier prove of the requested product quality
- less analysis costs

...and improves the product quality sustainably!