ABB Ability™ PlantInsight Operator Assist
State of the plant at a glance

To ensure continuous control of complex industrial processes, especially when control room staffing levels are low, a compact overview of plant operations is critical.
ABB Ability™ PlantInsight Operator Assist provides an overview that ensures that busy operators see the big picture while their attention is occupied with addressing specific issues.

Challenges
Controlling large industrial plants with complex processes poses challenges for operating personnel, who are often called upon to address many widely varying issues during a shift. In some countries, demographics and tight labor markets may amplify operator availability issues. Plants must be monitored and controlled by ever fewer people.

Well-designed and continuously updated automation requires less intervention by plant personnel, but this scenario may also mean that personnel have less opportunity to develop experience in identifying and addressing issues when they arise.

For example, if alarm limits are exceeded, an issue has either occurred or is about to, so immediate mitigation is essential. If the operator is flooded with alarms, this can lead to operators having difficulty prioritizing actions, which may lead to lost production, unplanned maintenance costs or even safety issues.

Keep an overview
ABB Ability™ PlantInsight Operator Assist provides a quick overview of the entire production process and supports plant operators in their daily tasks.

A compact overview helps operators to be aware of the current process state at all times. This helps operators to be able to identify, prioritize and mitigate critical situations earlier.

ABB Ability™ PlantInsight Operator Assist identifies the biggest deviations from planned production. This identification enables operators to quickly guide the process back to optimal state and continue production in the most efficient manner.

Features
- Easy-to-understand overview of entire process
- Display of very small deviations from normal state
- Rapid detection of deviations of individual and summarized process variables from ideal state
- Fast trend detection through integrated trend display with ideal production limits
- Narrower dynamic value ranges than normal limit values to indicate smallest deviations from ideal behavior
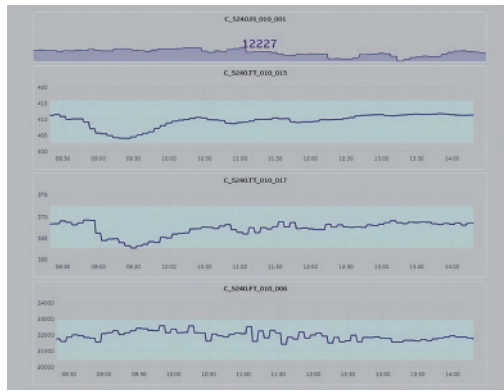
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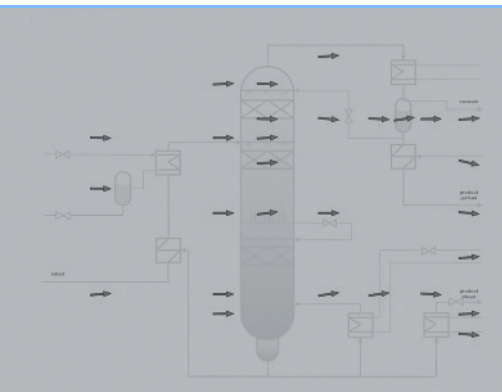
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01 Mass-data display: Arrow view for quick plant overview
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02 Dynamic trend display: The lane assist for your plant
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03 Heatmap: Shows areas where signals have deviated from the normal state

Visualization options

ABB Ability™ PlantInsight Operator Assist provides a variety of visualization options.

The mass-data display (Image 01) is a compact representation of the plant that allows the status of all important signals to be monitored. When arrows align horizontally, the current process value corresponds to the normal value at the current plant state. Deviations from normal state are shown by arrows pointing up or down.

A trend (Image 02) with a dynamic value range that specifies the optimal lane of operation is displayed for selected process variables. This range takes into account the current process state and is much narrower than the lane provided by conventional static limits. This enables even the smallest deviations from ideal behavior to be displayed early.

The heatmap (Image 03) provides a quick overview of deviations of all relevant signals from their normal values in the past. It supports long-term tracking of plant issues and simplifies shift changeover by displaying the plant status of the last few hours.

The limits for optimal process operation are determined from historical process data. Comparable process states from the plant archive are combined into models using machine-learning methods. In addition to considering individual important process signals, multiple signals are intelligently combined into aggregated signals.

Plant operators always have the essentials in view in order to mitigate issues proactively if needed and thus ensure productivity, quality, safety, and availability.
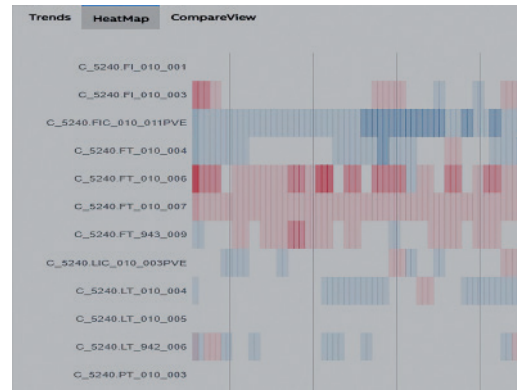
System integration

The display can be integrated into ABB control systems as well as control systems from other manufacturers. It is also possible to install it on a separate operator station.

The assistance system for the control room is based on the proven ABB OPTIMAX® platform. The required computer can be seemlessly integrated virtually or physically nto the existing computer infrastructure.

Data exchange is established through standard interfaces like OPC UA.

Benefits

• Availability, throughput and quality maintained
• Unplanned downtime and other costs avoided
• Plant, process and personnel safety not compromised
• Error analysis of long-term monitoring assists production, engineering and maintenance planning
• Shift changeover improved by giving new shift workers an overview of plant status in a heatmap
• Higher focus of operators on essentials without overlooking impending issues
• Early detection of deviations to allow mitigating actions to be taken sooner, before alarm