Seiki AIR Monitoring
Machine Data Acquisition

APS | WIP | MDA | DNC

Live & Accurate Resource Performance Data

When you've got production targets to meet and the challenge of keeping costs under control, it's essential to have a true and accurate picture of your manufacturing resource activity.

Manually collecting manufacturing data often leads to silos of information, in incompatible formats and it is frequently out of date as soon as it's captured. Seiki AIR Monitoring helps build greater integrity into the measurement of your manufacturing equipment performance. It enables you to quickly identify, evaluate and minimise critical productivity losses, thus helping to improve equipment availability and work throughput - your ROI.

Operator Dashboard
& Live Status View

CONNECT

Seiki AIR Monitoring allows you to connect every machine to visualise and understand how your entire shop floor is performing. It can support a dual installation of direct Ethernet based machine data acquisition and traditional digital I/O for legacy equipment, as well as MTConnect, OPC and other machine specific software protocols.

Advantages

- Real time visibility of all events occurring on your machines/resources

- Enable people to identify potential problems and take a proactive approach to maximising throughput

- Simplified and streamlined data capture process to reduce data entry errors

- Maximise the utilisation of your resources and base decisions for investment on real data

- Improve operational efficiency by understanding performance down to the individual resource

We've enhanced the traditional Operator screen into a more information rich view of the currently selected resource. As well as making it easier to input downtime reasons, users can add comments, track performance and view and search audit trails.

This encourages a more detailed approach to the capture of accurate and consistent resource activity data.

Machine Event Data Collection

The software captures productive and non-productive events occurring on CNC machines and manual resources.

- Each status change can be captured automatically (e.g. cycle start or alarm condition) via digital signals received from the machine tool, providing continuous recording of production time.
- Operators can manually enter status changes and reasons for the machine being in a non-productive state using the simple touch buttons.

All activities are recorded in the audit trail, which captures date and time, the login ID (can be the user's name) and any notes.
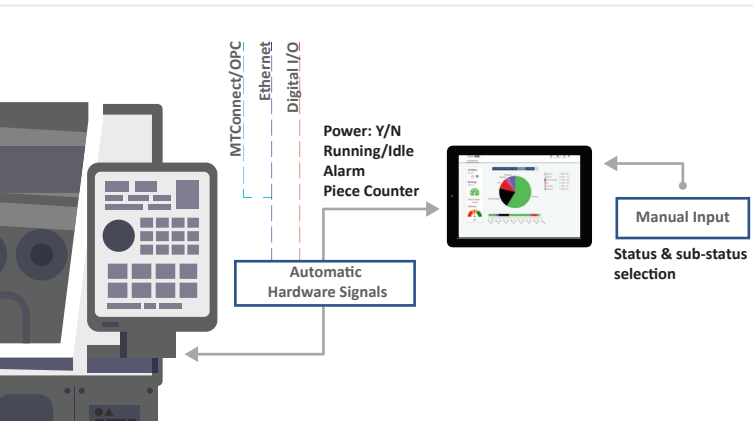
Customisable Status Grid

With Seiki AIR you get a single cost-effective solution that enables you to evolve your system as your requirements change. If you simply want to start by understanding whether your machine is running or when it has stopped in order to track downtime, this can be achieved with the out-of-the-box configuration. Once you're ready to start delving into the specific reasons for machine stoppages, the system includes a fully customisable ten by infinity monitoring status grid, so it's as easy as adding the statuses that you wish to analyse.

ACCURATE, CONSISTENT & COMPLETE DATA CAPTURE

Machine Data Acquisition Schematic

Defining your own loss causes allows you to more closely align them with your specific environment, resulting in more meaningful data. We recommend sharing your definitions with all stakeholders and agree their roles in capturing and reporting data. Part of this should be agreeing how the information will be used for improvement actions, both at a tactical and strategic level - clarity and transparency are the keys to success for any improvement initiative.

Additional Features

- The system prompts the user to enter the correct status if a machine goes into an unknown stoppage state

- Stoppage reasons can be entered retrospectively

- Simple colour coding and icons make it easy to identify the current status

- We can support a dual installation of direct Ethernet based machine data acquisition and traditional digital I/O

- When the data is available on Ethernet monitored machines we collect the Feedrate and Spindle Override, recording when they have been running in a non-optimal condition

Production Performance Reporting & Analysis

The Seiki AIR Monitoring analysis and reporting tools provide an easy method of accessing, viewing and summarising manufacturing performance data. It allows users to generate reports comprising of relevant management information based on real-time data collection.

QUICKLY VISUALISE ESSENTIAL INFORMATION

Live Status

Having overall visibility of manufacturing activity on your shop floor facilitates the control and flexibility you need to be responsive to customer demands and to continue adding value through the production process. Dashboard, Timeline and Andon views provide a fast visual indicator of the live status of every resource as it is updated by the Operator on the shop floor. The Timeline is interactive, allowing you to drill down into individual events.

Machine Utilisation

Machine utilisation analysis provides detailed analysis of the productivity of each machine, together with non-productive reasons. The results are displayed in interactive pie, bar and pareto charts. The information includes accumulative % and total hours for each event that has occurred during the selected period. Individual events or groups of events can be drilled into to identify trends or compare against other resources. Your machine utilisation data can be used to inform strategies to optimise machine uptime, throughput and ROI.

Additional Features

- A dynamic, live view of the shop floor from anywhere on your domain

- Configurable notifications to alert users of alarm conditions or when time thresholds are exceeded for specific conditions

- Machine generated alarm codes can be captured automatically (where available) to provide insight into micro stoppages

- Configure resource reporting groups for users and manage shifts

- Editable resource status audit trail

- Reporting for an unlimited number of concurrent users

- Export data as .csv, .xlsx, .dat, .doc, HTML and PDF

🌐 **www.seikisystems.co.uk**   📞 **01273 666999**   @ **sales@seikisystems.co.uk**

OPERATOR FEEDBACK

The Operator can now also view and monitor the performance of each resource they have been assigned. This includes the time it's been in the current status, it's utilisation figure for the interval period, and a breakdown of the downtime causing events over selectable pre-defined periods. Having a shared view of some of the information available to supervisory and management teams helps to empower the Operator to make a direct contribution to improvement initiatives, take corrective actions, and apply their experience and knowledge to prevent or limit unnecessary non-value adding activities.
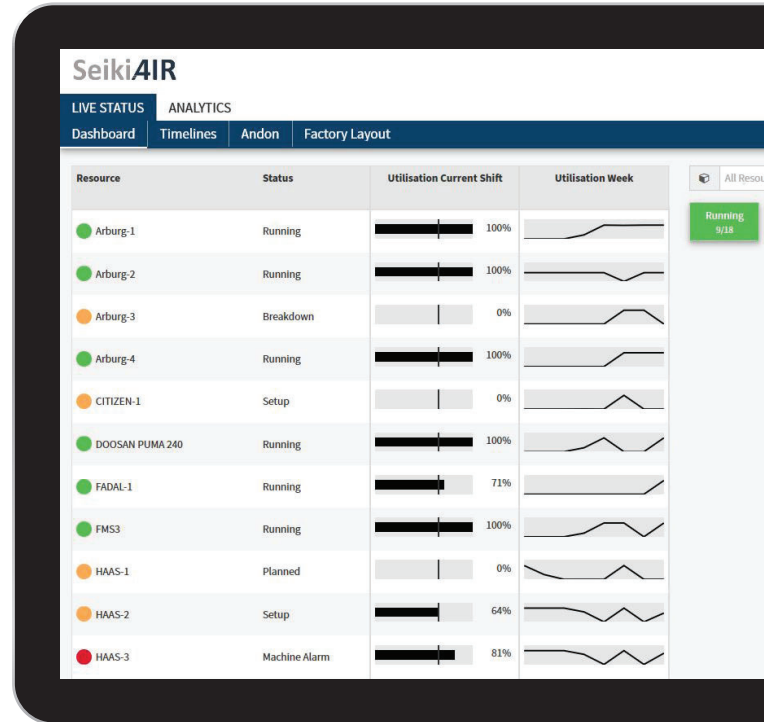
Advantages

- Supports 24/7 machining and gives you confidence that unmanned production is monitored

- Move beyond guesswork and know precisely what is happening

- Uncover previously hidden or unaccounted for productivity losses and their causes - even the small stoppages that may be seen as negligible but accumulatively can have a major impact on your performance

- Unlike fully manual methods, system logic, user prompts and notifications support consistent, accurate and complete information

- Data is stored and captured in a format that is compatible and easily shared with other standard data processing and reporting packages such as Microsoft Excel, making collaboration easier

- Use the insight into your actual machine utilisation performance to refine your capacity model and build greater integrity into your planning and scheduling system

Live Works Order Progress Tracking

Enhance your solution with the Seiki AIR WIP Booking module for a complete picture of your production performance. It supports transparent, frictionless works order processing. Tracking the live progress of each operation to deliver insight into the shop floor adherence to plan, helping to improve your on-time delivery performance. Together they also deliver the critical factors required to calculate OEE.

TURN DATA INTO
SHARED KNOWLEDGE

About Seiki Systems

Seiki has been specialising in digital manufacturing solutions since 1992. Today our portfolio comprises of a suite of integrated software modules that deliver a live, visual and dynamic picture of the production process. Our production control and manufacturing execution solutions maximise the productivity of production equipment and plant resources by monitoring and managing the complete works order lifecycle.

We provide a complete service that includes planning, installation, implementation, customisation, training and after sales support. Our aim is to work with you as your strategic Industry 4.0 (4IR) operational manufacturing management solution partner to secure your return on investment and support your business as it grows.