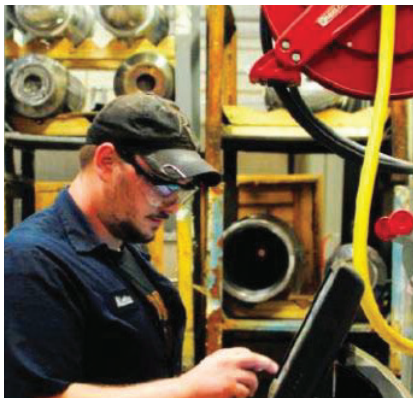
FACTIVITY

Machine Monitoring Module

Integrating with Machines

FACTIVITY's Machine Monitoring Module can provide everything you need to extend the standard set of functionality in FACTIVITY Shop Floor Module (SFM) with integration to the machines on the factory floor. Implementation of this module allows data capture directly from machines with little or no operator intervention. As the machine cycles up for production, the SFM can sense the change in status and automatically starts counting uptime and pieces/ parts produced.



Rate & Production Capture

Machine signals can indicate the completion of one piece/part and pass it electronically to FACTIVITY SFM. Capture of production permits the real time and back-end evaluation of job and performance. As pieces/parts are completed, FACTIVITY is updated automatically to reflect the increase in the job quantity and allows for the analysis of the actual rate of the asset. This provides two important data elements. The first is the paperless and "people-less" acquisition of the quantity for accounting purposes. The second is a visual measure of actual production rates for easier operational tracking.

Downtime & Availability

Should the machine I/O detect a downtime signal, the FACTIVITY SFM will reflect that change and automatically set the timer to collect downtime. This is indicated by a flashing red light on the appropriate shop floor operator station and can also be display on over-head giant screen monitors. Reason for the downtime situation can be identified from predetermined codes which sometimes can be captured automatically, as well. In most cases, reason codes can easily be captured manually using the touchscreen method prevalent in the SFM User Interface (UI). When implementing the Monitoring Module, management has the option to tailor the manual entry of the Operator User Interface and allow several different methods of reason code capture.

Reason Code Identification

Too often machines do not have the capability to send a reason code automatically for a down situation and the operator still needs to have a manual method of entering the reason associated with each downtime occurrence. FACTIVITY's configurable user interface can be tailored to force the operator to select a reason code from a predefined list before he/she can continue to use the FACTIVITY product.

Another approach is to capture the down time incident along with its start time, duration and a generic reason code into an electronic "log book" document. This electronic log book can then be retrieved after the machine is up and running and the occurrences can be manually associated with a specific reason for stoppage.

OPC Integration

FACTIVITY has several methods of "listening" to machines. One of the most common methods is through the implementation of an Open Process Control (OPC) Server. I/O outputs are associated with an identified asset and generally captured through a PAC/ PLC.

In addition, the address of these I/O also allows FACTIVITY to recognize the machine it is sensing along with the specific event that has occurred on the machine. Such as, an up/down situation or a production reporting event. All of these signals are captured in the central OPC server and translated into the appropriate resource identified within the FACTIVITY data files. In addition, FACTIVITY will not only track

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the production on the resource but will update the appropriate job operational step of the job routing file. The employee(s) attached to the resource will also be captured for better visibility when producing process improvement Analytics Metrics.

Intuitive User Interface (UI)

The main operator interface associated with machine integration is a Human Machine Interface or HMI. The FACTIVITY User Interface already available in the SFM is the HMI for machine monitoring so no addition time, money or resources are needed in order to implement this part of the integration project. The FACTIVITY software switches (known as Program Controls) allow specialized tailoring of functionality to match the customer specific needs. For example, internal software switches can be selected so at set-up time, automatic production reporting will be ignored.

Or, if during a down state in the middle of a job, a signal that would normally indicate the machine is back up and running can be ignored based on "intelligent" reason codes chosen (like machine maintenance).

Easy Touch Screen Job-In

The operator running the job can be required to identify themselves before working with the FACTIVITY product. The ability to connect the operator with the part being produced and the asset being used is an easy-to-use feature which provides a variety of benefits from validation and specific alerts to process improvements with FACTIVITY Metrics.

Operator Validation

Although not a requirement, software switches can be set to require an operator to sign into the machine prior to producing parts. Checks can be make against the employee level of training to determine if they are allowed to work on the asset. This can help provide a check point and protect the quality of work produced.

Factory Alerts

Operators at job-in time can be alerted to special notifications regarding the job about to be start.

This helps free the supervisor from having to be there when work begins or for the operator to remember a message or reminder given to him/her hours prior. Planners, production engineers and customer service management might also need to send a special reminder depending on a specific critical situation.

Dashboards

Several giant screen displays are available for visibility of real-time work for the entire factory floor without the need for an additional seat license. The Machine Status screen is user configurable and provides a spreadsheet style representation with continual real-time monitoring. The screen representation can be easily altered to tailor the size and location of the columns, size rows, fonts and headers.

This view can also be used on the desk top (license required) and has the ability for management system interaction to help identify specific problem occurrences and drill down to the floor screens for more detail understanding of the situation. ■