ABB Foundry Manufacturing in Progress

ABB Foundry Group
New Berlin, WI

ABB

Melting Control Screen at ABB Foundry Group

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>
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About ABB Foundry Group

The ABB Foundry Group in New Berlin, WI has designed their eMelt product around ICONICS GENESIS32 software. ABB is a leader in power and automation technologies that enable utility and industry customers to improve performance while lowering environmental impact. The ABB Group of companies operates in around 100 countries and employs around 115,000 people worldwide.

ICONICS Software Deployed

GENESIS32™ Enterprise edition is the HMI/SCADA solution under the hood for ABB'S eMelt product offering. GraphWorX™32, AlarmWorX™32 and TrendWorX™32 are all used in the eMelt application. This is a complete solution deployed on a single node. From GraphWorX32, operators can see a graphical representation of what is happening inside the melting furnaces. They are able to control the temperature, view the weight, and see the remaining time left before pouring. AlarmWorX32 is used for all alarms needing attention during the heating and melting stages. The TrendWorX32 component allows operators to view real-time trends of the process at all stages. Data tags can be dragged and dropped into a trending area during runtime for real time trending.

Key Features

The eMelt product is an MMI, SCADA and MES global solution for ABB's Foundry segment. This quick-to-learn and easy-to-use product based on OPC, is controller (PLC) independent, supports multiple languages and works with different unit systems. The system provides the monitoring and controlling of foundry processes for as many as four furnaces. The product is configured to individual foundry requirements and operations. It can connect to temperature measurement devices, analyzers and spectrometers and offers a variety of operational reports.

Project Summary

The eMelt foundry system, based on GENESIS32, was implemented by the ABB Foundry Group. Thermocouples, a type of spectrometer, are connected to the ABB Digital Inter Control Unit (DICO). This DICO then interfaces to GENESIS32 for operators to monitor and control the melting process.

The GENESIS32 application is also communicating via OPC to a Modicon PLC as well as PLC5 and ControlLogix hardware from Allen Bradley. One of the requirements for this application was to be able to handle connectivity to all the above-mentioned devices from a single Windows-based server.

Benefits of the System

ABB was able to get their foundry monitoring and control product (eMelt) to market quickly and cost effectively by partnering with ICONICS.

Conclusion

The eMelt project is key to ABB's success in foundry applications. The project is a global solution and will be joining ABB's Industrial IT family.
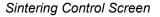

Metal Pouring at ABB Foundry Group

Sintering Control Screen

The entire system for one melting station only contains about 300 I/O points. However, the points can be spread across different controllers.

Other vendors and internal solutions were considered for this application. ICONICS was selected due to its ease of use in creating graphics, its small footprint, strong integration with Microsoft products, and open architecture based on OPC. All data is logged to Microsoft Access via ADO and Visual Basic. Microsoft Visual Studio and Office is also used in conjunction with this system running on the Windows 2000 operating system.

Solutions Highlighted

TrendWorX
Data Logging, Charting and Reporting Software

GraphWorX
HMI Graphical Display Package

AlarmWorX
Multimedia OPC Alarm Management Software