Advant control system technology provides platform for automation development at ICI

ABB’s Advant open control systems technology provides the platform for ICI’s new automation development at two plants which process materials for the production of Melinex™ polyester film products.

Client: ICI Melinex Polymer Plant
Location: Dumfries, United Kingdom
Scope of Work: Advant Control System

"Changing over to an entire new automation philosophy is a major task for any company. By working closely with ABB we have been able to achieve substantial progress in identifying and moving towards the optimum solution for meeting our specific and quite complex control requirements, now and into the future”.

Lew Steven
Technical Manager
ICI Polyester at Dumfries

ABB recently completed the award of a contract to supply an Advant OCS for controlling the production and purification of terephthalic acid at ICI’s T8 plant at Wilton. Now, a similar ABB automation system has been ordered for ICI’s Melinex Polymer Plant, Dumfries, to control the batch process of a feed stock which uses terephthalic acid as a prime ingredient.

The latest contract calls for the supply of an ABB Advant OCS with Batch 300 software to provide optimum control for the batch production of polyester chips. These are used for the onward processing of film products used in a wide range of applications, including packaging, printing, photography, electronics and computing.

The new system will provide improved quality through tighter product specification, reduced waste and energy usage combined with better repeatability of the batch product and the use of specialist control packages for tighter process control.

Other benefits will include conformity with the US SP88 batch standard; production flexibility through the ease of batch change-over and simplified maintenance through a full diagnostic toolset and the system’s redundant architecture.

The system will also provide for the expansion of automation facilities in line with future growth. In operation, the ABB Advant OCS will, initially, accommodate some 2,000 input and output signals. It will set up the batch information for the required end-product, control the input of materials, the reactions and will monitor the total process – from the production of monomer, its process into polymer of the right viscosity and desired properties, through to storage of the completed polyester chips.
The heart of the system will comprise an ABB Advant Controller 460 sub-system containing three controllers linked to 127 ABB TRIO remote I/O blocks. The ABB Advant Controller 460 is ideal for the critical control required under the ICI contract. It features high-speed processing, a large memory, one-to-one redundancy and provides for easy integration with components from third-party process control vendors. It is also fieldbus-ready to handle future technology.

Operators will benefit from high-resolution graphics and comprehensive windowing facilities via two ABB Advant 520 Operator Stations. There will also be an ABB Advant 515 IMS Station and an ABB Advant 515 Engineering Station. The Engineering Station can support plant documentation and AutoCAD® drawings to provide a total engineering facility. This can be accessed from anywhere on the TCP/IP network.

ABB specializes in ‘hot’ system change-overs and has been contracted by ICI to engineer the change-out methodology and to implement the system installation and commissioning.

Both ABB and ICI support the customer/supplier partnership concept to provide a team approach to solving problems. Lew Steven, ICI’s technical manager for polyester at Dumfries, comments: “Changing over to an entirely new automation philosophy is a major task for any company. By working closely with ABB we have been able to achieve substantial progress in identifying and moving towards the optimum solution for meeting our specific and quite complex control requirements, now and into the future”.

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