Laboratory Automation Control Platform

MDT Staff

Aerotech's new Ensemble® LAB control platform makes it easier than ever to automate laboratory and light industrial manufacturing applications. The full-color touch-screen display enables quick access to all the core functionality while providing deep contrast and exceptional readability, while the intuitive tabbed interface provides single press access to all setup and operation screens. An integral rubberized front-panel interface provides immediate tactile feedback for jogging and manual positioning operations. A front-panel USB port is available for connection of a keyboard and other peripherals to assist in the creation of complex program sequences.

Ensemble Lab is designed for applications where ease of operation is desired without sacrificing overall system capability. The front-panel interface allows an operator to quickly execute simple operations such as jogging, homing and moving to fixed positions. For more complex operations onboard memory stores programs that can be accessed from the front panel or through remote control.

The Ensemble LAB includes full compatibility with both EPICS and TANGO distributed control protocols. Both interfaces are used at leading light source (synchrotron) facilities and other government laboratories, allowing the Ensemble LAB to seamlessly integrate into applications at all major research institutions.

Unlike most competitive products that use cryptic two-letter mnemonics, Ensemble LAB is programmed in an easily readable BASIC-like syntax. It is programmed off-line with a graphical user interface in Windows®, featuring an intuitive Program Editor, Variable Output window, Compiler Output window and Task State monitor. After the programs are developed and tested they can be downloaded and stored on the controller for future use.

Aerotech's MPS series stages support the Ensemble LAB's FlashConfig feature which stores all of the parametric information required to operate the stage on the stage itself. The stage is automatically identified and all operational parameters including

axis calibration data are uploaded into the Ensemble LAB ensuring safe, accurate and true “plug-and-play” operation. FlashConfig provides maximum flexibility for laboratory environments where systems are often reconfigured to meet changing application requirements.

Ensemble LAB can run up to 4 programs simultaneously for easy partitioning of complex operations. One task could be used for motion while the remaining tasks are used for process control, or the controller could be configured to operate four separate programs controlling four motors.

The Ensemble LAB uses the processing power of a 64-bit, double precision, floating-point DSP to offer exceptional performance in a variety of applications including point-to-point motion, linear and circular interpolation, single- and multi-axis error correction, direct commutation of linear and rotary brushless servomotors, and servo autotuning. High-speed interrupts and data logging capabilities provide a real-time link to external systems. Ensemble LAB also offers high-speed position latching capability and optional single-axis PSO (Position Synchronized Output). Whether the requirement is simple point-to-point motion or complex velocity profiled contours with output on the fly, Ensemble LAB ensures peak performance for critical applications.

For more information, visit www.aerotech.com [1].

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[1] http://www.aerotech.com