Tempo™ Automation Control Software

DYNAMIC SCHEDULING FOR LABCYTE AUTOMATION SYSTEMS

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BROCHURE
Version 2.1 | MAY 2017

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Tempo™ Automation Control Software

Dynamic Scheduling for Labcyte Automation Systems

Tempo Automation Control Software offers a research-friendly interface for scheduling the Access™ Laboratory Workstation protocols. In a dynamic fashion, Tempo software manages all tasks — including sample management, plate handling, liquid handling, detection, and Laboratory Information Management System (LIMS) updates without custom programming or scripting. Included with all Access Workstations, Tempo software is the only platform that allows researchers to rapidly create automation routines incorporating protocols developed with Labcyte Echo® Software Applications.

Efficient Integration
Ensure maximum throughput and walk-away time
Automation Routines Optimized for Echo® Liquid Handlers

Research-friendly Interface to Automate Any Workflow

- Integration of all Echo Liquid Handlers
- Import any Echo Software Application protocol
- Integrate a range of laboratory devices
- No scripting or custom programming required
- Dynamic, event-driven scheduling adjusts on the fly
- Guided error recovery to quickly resume runs

Intuitive Interface
Develop complex automation protocols with little experience

Seamless Integration with Echo Software Applications

Echo Software Applications utilize interactive wizards and graphics to develop complex liquid transfer protocols for Echo systems. Tempo Software imports these protocols and coordinates Echo liquid handling actions, robotic plate movements, and tasks performed by integrated devices into a fully optimized schedule — without requiring users to build loops, write custom scripts, or manage external programs.

- Echo® Array Maker
  Transfer samples from microplates to custom microarrays, MALDI chips, or arrays at the bottom of a microplate well

- Echo® Cherry Pick
  Import pick lists to cherry pick samples from large libraries for secondary screening and lead optimization

- Echo® Combination Screen
  Provides a graphical interface to visually combine dose-response curves, controls, and single concentration transfers into combination screening protocol

- Echo® Dose-Response
  Interactive prompts guide the mapping of transfers to create curves of varying concentration range using direct dilution

- Echo® Plate Audit
  Analyze sample characteristics across sample plates and build validation rules to qualify plates for Tempo software protocols

- Echo® Plate Reformat
  Quickly replicate sample plates into standard or completely custom layouts
Key Features

Plate Storage Control

Tempo software’s plate storage control tracks plate properties in real-time. The status of various plate properties, such as plate type, lid type, plate location, barcode, and seal presence is available in a customizable table that is continuously updated during protocol runs. In addition to plate properties, the table also identifies plates that have been allocated to a run or rendered invalid after analysis with the Echo Plate Audit application.

Runtime Actions

After importing an Echo software protocol, Tempo software provides a list of plate handling actions that can occur before or after Echo liquid handling tasks. The actions available are dynamically generated based on the devices integrated. Barcode reading, bulk filling, shaking, sealing, centrifuge, peeling, and detection are some of the actions available.

Barcode Handling

If a Tempo software protocol is processing samples according to a pick list, barcode verification is enabled. Barcodes are tracked in the plate storage table and verified by Access or POD barcode reading stations and Echo system barcode readers throughout a protocol run. Operators are notified of missing or mismatched barcodes with step-by-step recovery guidance to continue the run.
Device Management

To simplify the management of integrated devices, Tempo software provides easy access to device parameters and options. Options to perform device maintenance, reset cycle counts, and set devices on or offline are just a few examples. Integrated devices can be operated in a standalone or manual fashion when they are not required for a protocol in progress.

Simultaneous Protocols

Tempo software allows for the running of multiple protocols in parallel. The software automatically manages plate and device handling based on priorities designated for each protocol by the user. Users can start multiple Tempo protocols simultaneously, whether they involve an Echo protocol or not.
Key Features continued...

Guided Error Recovery

In the event of an error, Tempo software provides operators with interactive prompts to return the system to an operating state. Error recovery options include manual plate removal, manual device command and standard error handling options such as abort, ignore, and retry.

Error Handling Options

Runtime error prompts offer ways to quickly recover and continue

Error Recovery Wizards

Step-by-step guidance to recover quickly from any error or emergency stop
Notification and Reports

Runtime notifications can be configured globally or for each individual protocol. Notifications are reported in the run status view and can be communicated through email. All activities that occur during a run are recorded into a set of reports organized by plate activities, device actions, errors, run details and more.

Tempo software offers a growing list of advanced features

External Program Integration

Initiate external programs before or after protocols begin to validate protocols against custom rules, update LIMS databases, or interact with external software applications.

Device Pooling

Split plate handling activity across common devices to increase throughput.

External Data Management

All data from integrated devices (including detection platforms) can be routed to user-defined directories for easy access at run completion.

Gantt Chart Viewer

Compare the timing of events across multiple protocols to analyze the impacts of priorities and other scheduling considerations.

Counter-balance Management

Counter-balance plates can be mapped to plates used across Tempo software protocols. As soon as a protocol plate is ready to start a centrifuge step, Tempo software automatically schedules the loading of the appropriate counterbalance plate.