Press Release

HOLLYROCK MILLER MARKETING COMMUNICATIONS

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Adaptive Control Maximizes Accuracy of Nano25 Nano-Volume Robotic Pipettor

Hudson Control Group is driving innovation in nanoliter dispensing with the Nano25. Employing adaptive control and real-time feedback, the eight-channel Nano25 robotic pipettor provides accurate, low-volume delivery of liquids across a range of 25 nanoliters to 10 microliters.

The Nano25 was developed to meet the growing need throughout the research, pharmaceutical and clinical communities for low-cost, high-throughput DNA sequencing and other applications involving the dispensing of expensive reagents in small quantities. Compatible with 96-, 384-, and 1536-well plate formats, it can also be used for spotting arrays in microplates or on other formats.

The Nano25 employs a closed-loop pressure-based feedback system that facilitates “on the fly” adjustments to compensate for variations like temperature, viscosity and residual volume that can compromise performance at low volumes.

Adaptive Control at Work

A flow sensor within each channel of the Nano25, coupled with a high-speed valve, actuates the flow of liquid. The flow sensor responds in real time to the internal flow-pulse that results from the brief opening interval of the valve. When liquid is shot through the ceramic tip, the flow-pulse delivered by the flow sensor is directly proportional to the volume dispensed.

Built-in temperature sensors measure and record the exact amount of liquid being aspirated or dispensed in each of the eight channels. The Nano25 automatically compensates for changes in viscosity due to temperature fluctuations, adjusting the valve accordingly. The automated diagnostics also detect and correct for clogging and liquid compressibility.

Data delivered by the flow sensor can be saved and backtracked in order to validate the aspiration and dispensing process. The dispense information can then be used for quality control assessments and automatically be made part of an electronic record.

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Flexibility Optimized

Each channel in the Nano25 offers independent pipetting control and liquid level detection, so that any combination of channels can be used at any one time. This capability provides researchers with tremendous application flexibility and speed, allowing them to perform one-step serial dilutions, normalization and multi-parameter experiments at very high throughput.

The Nano25 can be loaded and operated manually, but is also fully compatible with robot loading systems from most manufacturers, including Hudson Control's own PlateCrane EX. It can also be used in-line with the Hudson Control LabLinx® high-throughput track system for unparalleled high-throughput and ease of setup.

Software-Driven

The Nano25 is powered by Hudson Control Group's SoftLinx™ software, which facilitates the robotic pipettor's integration with most robots and other automated instruments. If SoftLinx™ doesn't already include an interface to a specific lab instrument, the Hudson Control team will develop one.

SoftLinx™ will communicate with each instrument via a serial port from the computer, and oversee the process of moving labware among instruments, running those instruments' internal programs and then moving to the next instrument or an output stack. SoftLinx™ features an icon-based, drag-and-drop method editor, and uses VBA for instrument interfaces.

About Hudson Control Group

Located in Springfield, New Jersey, Hudson Control Group is a leader in microplate automation, robotics and customized software-driven solutions.

The company works with customers in the drug discovery, high throughput screening, proteomics and genomics markets to develop strategies that best meet their unique needs, whether for an integrated system of automated laboratory equipment or for automating a single instrument.

For more information, go to www.hudsoncontrol.com

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