Zone Refiner - Ultra Purification of Organic Chemicals

Design Scientific and Horner's XLT

HORNER AUTOMATION GROUP

Design Scientific

Chemical Purification Project,
Design Scientific, Charlotte, NC

Previous panel with knob pots and an old circuit board

Current panel with the XLT in place

SoluPrep Solution

PhasePrep Solution

OPPORTUNITY

Zone Refining is the method of choice for ultra-purification of organic chemicals. The MiniZone™ II is a versatile scientific instrument developed for the ultra-purification of organic chemicals and concentration of impurities. The original MiniZone™ consisted of knob pots and an old circuit board for control.

CHALLENGE / SOLUTION

The main problem was getting the correct resistors, relays and switching valves to control heating and cooling, along with the stepper motor rotation. John Gruber from Design Scientific chose the Horner XLT controller in combination with Horner's own Cscape software, to solve this issue. The XLT does not have to rely on resistors or relays going bad, and it replaced all of his circuit boards and heating elements. Also, the XLT worked great with other parts like the stepper motor controller. John customized the Cscape software to run the controller.

FUTURE PROJECTS

Design Scientific also offers SoluPrep and PhasePrep Solutions. The SoluPrep Solution automatically calculates and dispenses the exact amount of solvent required to prepare a precise concentration based on the approximate mass of solute added by the operator. The PhasePrep Solution is an instrument designed to document and prepare solutions and mix solvents for HPLC mobile phases, titrations, extractions etc.

VB6, John's current software on these solutions, only runs on windows, but he is wanting to get away from having windows embedded all together. He is looking to rewrite his code in CSCAPE to run off the Horner EXL6 or XL7 (or comparative XL Prime models). This will get rid of his circuit board again in these units and replace other parts as well. The all-in-one controllers that Horner offers will allow him to do things in a simpler process.

"Honestly, my ALL-IN-ONE place to go for AUTOMATION!! Controllers are great!!! ~ John Gruber, Design Scientific

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