

Liquid Controller

Client: *Ian Bird, Ph.D*

Team Members:

Steve Welch (Leader)

Joe Decker (Communications)

Justin Gearing (BSAC)

Dan Miller (BWIG)

10/31/08 – 11/6/08

Problem Statement:

Currently, reagents are added manually when testing cell signal functioning under a microscope. This leads to problems regarding accuracy of timing and amount. To resolve this issue, an automatic system is desired. This system will use pumps controlled by a computer interface to precisely deliver required reagents.

Last Week's Goals

- Steve: Polish program, test with interface to ensure compatibility
- Joe, Dan, Justin: completely assemble valve panel EXCEPT one NC valve and the NO valve. Design or select case and order parts.
- Test valves for resistance, exact opening/closing voltages, find power loadings
- Test power relay for proper function

Summary of Accomplishments

- Programming continued, needs final touches and testing with interface
- LabJack obtained and arrived
- Met with client, specified goals in more detail

This Week's Goals

- Completely finish design by end of next weekend!
- Steve: Finish program, test with interface to ensure compatibility, assemble electrical components together
- Joe, Dan, Justin: completely assemble valve panel AND case with proper holes
- Test valves for resistance, exact opening/closing voltages, find power loadings
- Test power relay for proper function
- Fasten components to inside of case

Project Difficulties

- Still cannot find a way to save front panel settings as a file for easy templates. CAN, however, save settings as default, then open file up with those settings later.

Activities

Name	This Week
Joe Decker	Shop Permit Acquisition, 1 hr
Justin Gearing	-
Dan Miller	Shop Permit Acquisition, 1 hr Case research, 1 hr
Steve Welch	LabVIEW programming, 4 hr
Team	Team/Advisor meeting, 1 hr Client meeting, 30 min
	Cumulative (Hr)
Joe Decker	8.0
Justin Gearing	10.5
Dan Miller	13.0
Steve Welch	25.0
Team	16.0
Total	72.5

Expenses

Item	Part #	Source	Qty	\$/unit	\$
NC Two-way isolation valve	161T011	www.nresearch.com	7	60.85	425.95
NO Two-way isolation valve	161T021	www.nresearch.com	1	73.05	73.05
NI Power Relay Board	SC-2062	www.ni.com	1	63.00*	63.00*
LabJack Interface	U12	www.labjack.com	1	129.00	129.00
Aluminum Panel 1/8"x4"x12"	9041K12	www.mcmaster.com	1	8.67	13.17*
Pipe Clamp	30285T35	www.mcmaster.com	2	10.00	20.00
Thumb Screw Pack	90181A595	www.mcmaster.com	1	6.37	10.87*
Total (*Includes Shipping and Handling)					735.04

	September	October	November	December
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