

Octaflow Version 2.0.0.0  
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\*\*\*\*\* HARDWARE SPECIFICATIONS \*\*\*\*\*

\*\*\* Valve Banks \*\*\*\*\*

4 DB9 connectors - 8 valves perbank  
Each bank supply is programmatically adjustable from 0-24 VDC, maimum 500 mA per pin.  
Total valve current not to exceed 3 Amps.  
Valve 1 - pin 1  
Valve 2 - pin 2  
Valve 3 - pin 3  
Valve 4 - pin 4  
Valve 5 - pin 5  
Valve 6 - pin 6  
Valve 7 - pin 7  
Valve 8 - pin 8  
Valve 9 - Common positive supply 0-24 VDC

\*\*\* Sync Output \*\*\*\*\*

BNC connector  
Output Voltage Digital Logic Levels 0-5 VDC, maximum 25mA.  
Activates durning ON time of selected valves.

\*\*\* Triggner Input/Output \*\*\*\*\*

BNC connector  
Bidirectional Digital Logic input/output 0-5 VDC, maximum 25mA.

\*\*\* Analog Output \*\*\*\*\*

BNC connector  
Output analog voltage 0-5 VDC, 25 mA maximum.

\*\*\* USB Interface \*\*\*\*\*

USB 2.0, Full-speed USB-serial CDC emulation  
Requires drivers Microsoft usbser.sys, Microchip Driver MCHPCDC.inf  
Compatible with Microsoft OS Windows 98SE, 2000, XP

\*\*\*\*\* SOFTWARE SPECIFICATIONS \*\*\*\*\*

Octaflow Version 2.0.0.0 Automated Perfusion System  
Compatible with Microsoft OS Windows 98SE, 2000, XP  
Build 0 includes:

1. Automated valve sequence control to 1.5 ms resolution
2. Manual valve control
3. Default sequence, configuration settings
4. Pressure test
5. Valve channel continuity test
6. Integrated Cleaning/Valve Flush Manager
7. Valve selectable On indication
8. External Sequence trigger control
9. Analog output valve, step and pressure reference
10. Automated pressure control
11. Excel interface

\*\*\*\*\* FIRMWARE SPECIFICATIONS \*\*\*\*\*

Octaflow 4550.1 Control

Requires Microchip drivers MCHPCDC.inf, Microsoft usbser.sys for CDC communication

Requires Microchip drivers cc3260.dll, mpusbapi.dll, PICBOOT.dll and Microchip PDFSUSB application tool for auto firmware update

\*\*\*\*\* FIRMWARE UPDATES \*\*\*\*\*

Octaflow System Firmware 2.00.00.01 Nov 13, 2006 - Build update to correct following problems

1. Corrects error in failing to setup pressure for first step at start of sequence run.

\*\*\*\*\* SOFTWARE UPDATES \*\*\*\*\*

Octaflow Version 2.0.1.0 Sept 18, 2006 - Build update to correct following problems:

1. Corrects file linking problems enabling sequence and configuration files to be linked/unlinked in either Octaflow or Excel format.
2. Corrects SaveAs option allowing files to be opened saved in either Octaflow or Excel format.
3. Problems with auto loading of most recently used files corrected.
4. Perfusion Manager Title bar given correct title.

Octaflow Version 2.0.1.1 Nov 13, 2006 - Build update to correct following problems:

1. Corrects manual mode activation error. Now it is possible to operate manual mode directly without needing to open or create a sequence file.
2. Corrects value conversion error when changing pressure units.
3. Auto detects error and warns user when incorrectly loading Excel files (.xls) of the wrong format, e.g., loading Sequence files and Configuration files and vice versa.
4. Corrects omission auto loading user name, serial number, build date and software/firmware revisions.
5. Enhanced valve voltage system accuracy.

Octaflow Version 2.0.2.2 Jan 2, 2007 - Build update to correct following problems:

1. Correct download error for sequence file SYNC signal which prevented sequences from downloading when SYNC set using auto select user defaults.
2. Correct error in saving Trigger Mode user default setting.
3. Correct errors in Cleaning Manager and enhance user interface to allow better time value entry.
4. Add 5 minutes ON, 1 minute OFF thermal safety limit to Cleaning Manager.
5. Add help files.
6. Add the following Key Shortcuts:  
ALT+C Open Configuration File  
ALT+S Open Sequence File  
ALT+F ON/OFF Flush Valve  
ALT+1 ON/OFF Alt Valve 1  
ALT+2 ON/OFF Alt Valve 2  
ALT+3 ON/OFF Alt Valve 3  
ALT+4 ON/OFF Flush Valve  
ALT+T Open User Settings  
ALT+W Open Valve Cleaning Manager  
ALT+V Run Valve Check  
ALT+P Run Pressure Test  
ALT+N Open Notes Manager  
ALT+L Open Log Manager

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Octaflow Version 2.0.2.3 March 1, 2007 REQUIRES FIRMWARE UPDATE 2.0.0.1 TO FUNCTION PROPERLY.

1. Correct triggering synchronization errors.
2. Correct unit USB connect/disconnect stability problems.
3. Disable menu edge trigger option for trigger output.
4. Enable Prepressure trigger function.
5. Add time unit menu selection.
6. Add print function.

Known issues to be addressed in the next version include:

1. Print sequence function does not print loop information.
2. Label2 column for naming solutions does not automatically update from configuration file when entering valve 2 in dual valve sequence mode.

Octaflow Firmware Version 2.0.0.1 March 1, 2007 - Build update to correct following problems:

1. Correct triggering and runtime sequencing errors.

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Octaflow Version 2.1.3.5 April 23,2007

1. Restrict Run button enable to prevent false triggering during periods of high PC usage.
2. Prevent user from including bottom row (undefined step) when configuring loop constructs.
3. Disable Windows default access key activation on ALT+F shortcut key to prevent inadvertant menu access when using keyboard to control flush valve manually.
4. Added Solution Library feature providing more intuitive management of valve/solution assignments.
5. Add integrated software install and update utilities.

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Octaflow Version 2.1.4.6 May 15,2007

NOTE: Some user's may receive a message during installation warning of a failure to register an ieiframe.dll file. This is due to recent changes in how Windows manages Internet Explorer 7 frames and should not effect program operation. **SIMPLY SELECT THE CONTINUE OPTION** and resume installation.

1. Fix error making Solution Explorer updates reflect changes between Solution Explorer and Configuration spreadsheet.
2. Add dynamic indentations to toolbar buttons for easier operational assessment.
3. Activate previously disabled configuration and sequence spreadsheet Edit menu options.
4. Remove Sequence Download and Register software menu options.
5. Correct control error in manual mode providing automatic turn off of previously selected valves when making a new valve selection.
6. Activation of Help->Update Software menu option facilitating installation of internet upgrades.
7. Correct Copy Step Menu which previously inserted a copy of a user selected step at at desired loction with sometimes erroneous valve number. Now, no step insertion occurs. The information in one step is merely copied over the information of another.
8. Corrects errors in Default Configuration and Sequence setting menus. Now, user determined default values are copied directly to the selected step or valve number.
9. Error, causing the Delete Loop menu to appear outside the loop editor is corrected.
10. Manual timing of valve ON cycle as indicated by the ON TIME window in the manual mode and the final elapsed time listed in the sequence spread sheet during record mode are synchronized to same value.