



Harvard Apparatus Pump Controller

Please download the complete manual under the pumps/liquid handling section of our website by clicking [here](#) or by visiting <https://www.harvardapparatus.com/technical-support/manuals>.

Unpacking the System

Your Harvard Apparatus Pump Controller (HAPC) is packed in a shipping carton that is specifically designed to provide maximum protection to the instrument during transportation and normal handling conditions. Upon receipt, the carton should be examined for any external damage resulting from shipment.

Open the carton and carefully remove the HAPC System and inspect the unit for any apparent damage. Save the carton and packing materials for future transportation and shipping requirements. Check the packing slip to ensure that all items ordered and listed are included in the shipment. Inform Harvard Apparatus immediately if any parts are missing or damaged. Remove the plastic screen protector from the touch screen.

Installation

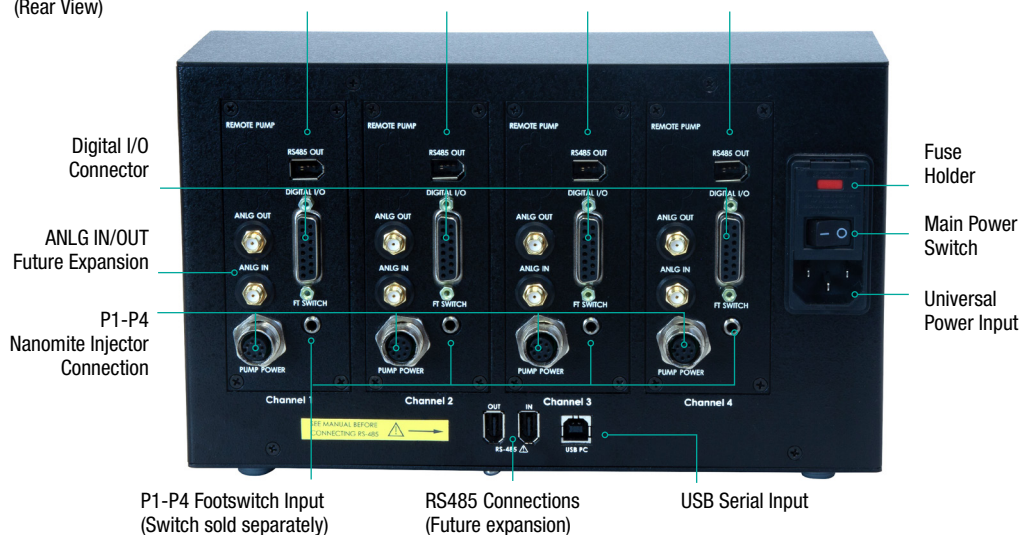
Once you have determined that the components of the system have not sustained any obvious damage in shipment, proceed with the installation.

Place the HAPC in a location that is a dry, level, sturdy surface free from extremes in ambient temperature, dust or chemical exposure. Allow the device to equilibrate to room temperature. The HAPC also contains a battery powered real-time clock. Please remove the plastic insulating tab found between the battery compartment door and the bottom of the HAPC.

The instrument is ready for use with 100–240 VAC, 50/60 HZ. Connect the mains/power cord into the back panel. Before powering up the HAPC, connect the purchased modules. The HAPC will only recognize compatible pump modules upon power-up.

Harvard Apparatus Pump Controller (Rear View)

RS485 Out – Connections to RS485 IN on Pump 11 Elite, Pico Plus Elite or PHD ULTRA™ Syringe Pumps



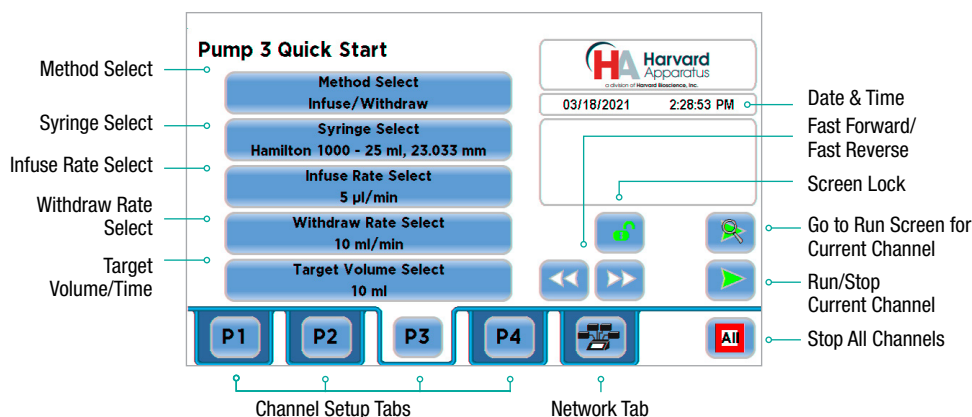
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Graphical User Interface

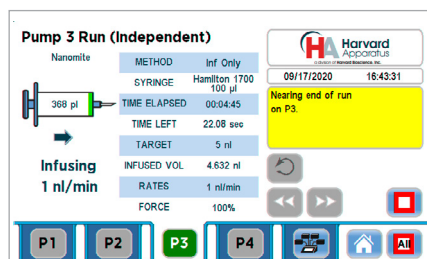
Once the pump modules are properly connected, power up the HAPC by engaging the Main Power Switch on the back-side of the unit. The HAPC will start an initialization procedure followed by the opening splash screen then the “Pumps Found” Screen. Either click the button with the green check mark on the “Pumps Found” screen or wait 5 seconds for the HAPC to enter the Pump Controller **Network** screen. Select either **P1, P2, P3** or **P4** tab to setup that channel.

Method Select chooses the mode of the pump, including Quick Start, Reciprocal, Twin as well as a complete set of on-screen programmable functions. **Syringe Select** allows the choice of a standard manufacturer's or custom syringe, **Rate Selection** and **Target Volume** or **Target Time** (mode dependent) set the flow parameters. Each channel is setup by a tab with the designator P1-P4 which corresponds to the pump channel being setup. The **Network** tab allows setup and run control for all four pumps. A channel (P1-P4) can be start/stopped from both the corresponding channel tab or **Network** tab. Once all parameters are set, select the **Run/Stop Current Channel** or **Run/Stop Selected Channels** to operate the connected syringe pumps.

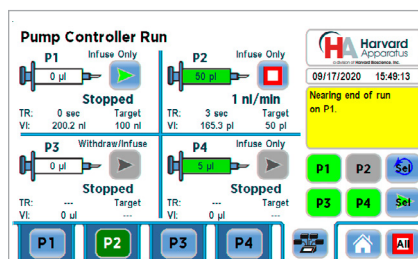
Channel Quick Start Screen



When running in tab **Run** view for a single channel, a real-time syringe graphic along with operation parameters are displayed (image lower left). In **Network** tab **Run** view, the HAPC displays all four channels. Individual channels can be selected for Network control.



Run Screen Single Channel



Network Tab Run Screen All Channel