Equipment for cellular &
electrophysiology research

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Digital control of cFlow with pClamp9 and Digidata 1322A

For digital control see page 8 of the manual. For the Digidata 1322A connect IO0, IO1 .. IO3 to the Digital Out 0, 1 .. 3 on the Digidata interface. IO4 is not used. The interface used negative logic. This is common practice to provide immunity to electrical interference for instruments. In this case all the inputs are connected internally to the **cFlow** to 5V via a 10K resistor. To change the level of an input it must be held at 0V or close to 0V by a digital output. Also this must happen only for a brief time (typically 2.7-50ms, typically 10ms). If it is held at 0V for a longer time the **cFlow** may not interpret the command properly. Make sure the Flow Thru switch is in the **down (off)** position or the IOPort will not operate properly and valves opening will be offset by 2.

1. Go to the Output TAB and set the Digital OUT Holding pattern to 1111 (ie. all checked)
2. In Wave0 check Digital outputs, leave Active high checked.
3. To select Channel 3 to come on at the start of an Epoch put in **00 in Digital bit pattern (#3-0) and set the Train Period to the same as the First duration (ie. we only want one pulse). Set the Pulse width so that it is 10ms (see democFlow.pro protocol). This works when you want to change the cFlow channel at the start of a voltage pulse. If you want to change the channel during a voltage pulse then set up separate Epochs to select the channel and set the bit pattern to 1111 in any Epochs where the channel is not being changed (see democFlow1.pro protocol). In democFlow3.pro the protocol covers a longer time period.