LabJack

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What are digital I/O? (IO, D, DIO, FIO, EIO, CIO, MIO)

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DIO = Digital Input/Output
IO/D/FIO/EIO/CIO/MIO = Somewhat arbitrary monikers for specific DIO ports on different LabJacks.

Digital I/O stands for Digital Input and Output. Digital Inputs allow a microcontroller to detect logic states, and Digital Outputs allow a microcontroller to output logic states.

Each digital I/O on a LabJack can be individually configured to one of 3 states: input, output-high, or output-low.

Digital Input: A digital input detects if a voltage is above/below a specific threshold. If the voltage is higher than some value, the computer will detect the digital input as high/set/1. If the voltage is lower than some value, the computer will detect the digital input as low/clear/0.

Digital Output: A digital output allows you to control a voltage with a computer. If the computer instructs the output to be high, the output will produce a voltage (generally about 5 or 3.3 volts). If the computer instructs the output to be low, it is connected to ground and produces no voltage.

Example:

Turn an LED On/Off using a digital I/O.
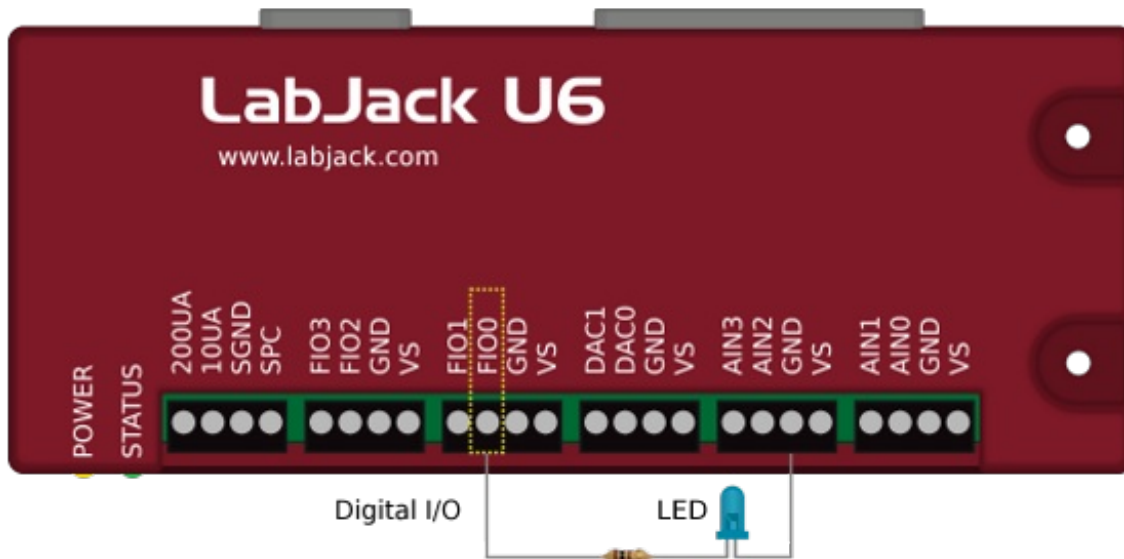
1. Wire the LED as shown. Optionally connect a current-limiting resistor.
2. Set the state of FIO0 to output-high on the computer. The LED will turn on.
3. The LED will turn Off if the state of FIO0 is set to output-low.
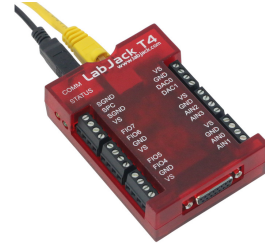
Hardware with Digital I/O

U3

U6

UE9

T4

T7

U12

For LabJack-specific info on digital I/O, go to the user's guide or datasheet for the device of interest. Start at the main support page and go to the device of interest. For example, in the Section 2 of the U3, U6, or UE9 User's Guide, there is a Section about digital I/O, and Appendix A of each has electrical specs.