The CB25 provides screw terminal connections, with short-circuit/overvoltage protection, for the extra 16 digital I/O on the LabJack U12.

The green LED on the CB25 is directly powered by the +5V supply, so it should be lit whenever the CB25 is connected to an active LabJack U12.

D0-D15 – These are connections to the 16 lines of digital I/O. Each has a 1.5kΩ series resistor (R0-R15) for short-circuit/overvoltage protection, and a jumper (J0-J15) to short that resistor. In general, the jumpers will not be installed unless you are using a particular line to output more than 1 mA. See the specifications section of the LabJack U12 User's Guide for more information on the D lines.

Short-Circuit/Overvoltage Protection: The LabJack U12 has diodes from each D line to each power rail. These diodes clamp the voltage seen by the LabJack to about 5.7 volts maximum and -0.7 volts minimum, but external resistors are required to limit the current to 25 mA (200 mA total for all 16 lines). The CB25 provides 1.5kΩ resistors for this purpose. Taking 1.5kΩ * 25 mA, we get a maximum voltage drop of 37.5 volts so the maximum safe voltage that can be handled by each D line is about 37.5 + 5.7 = 43.2 volts (the minimum safe voltage is about -38.2 volts). Note, however, that the power dissipated by the resistor in this situation is ((0.025)^2)*1500 = 0.94 watts. Since these are ¼ watt resistors you will not be able to block this maximum voltage continuously. The maximum continuous voltage drop is about (0.25 * 1500)^0.5 = 19.4 volts so the maximum safe continuous voltage that can be handled by each D line is about 19.4 + 5.7 = 25 volts (the minimum safe continuous voltage is about -20 volts).

+5V – These are the same as the +5V connection on the LabJack U12. They are a 5 volt source (output), so do not connect another power source to these terminals.

GND – These are the same as the GND connection on the LabJack U12.

Declaration of Conformity

Manufacturers Name: LabJack Corporation
Manufacturers Address: 3112 S Independence
Lakewood, CO 80227
USA

Declares that the product

Product Name: CB25 Terminal Board
Model Number: CB25

conforms to the following Product Specifications:

EMC Directive: 89/336/EEC

EN 55011 Class A
EN 61326-1: General Requirements
EN 61000-4-2: 1995
EN 61000-4-3: 1995

and is marked with CE.