

**DC Power Wiring Details for CDS 19 Inch Chassis**  
**LIGO-T1100079-v1**  
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## 1. Overview

This document shows the DC power wiring process for a standard 1U chassis used in LIGO CDS.

## 2. Power wiring

Figure 1 shows the input power wiring and position of the chassis and panel mounted components. Six inch lengths of 18 AWG wire are soldered to the Conec power connector (Conec p/n 3003W3PXX42A10X) and then strain relieved with shrink tubing. The DC wire color code used for this chassis is shown in Table 1

**Table 1, Input Wiring Colors**

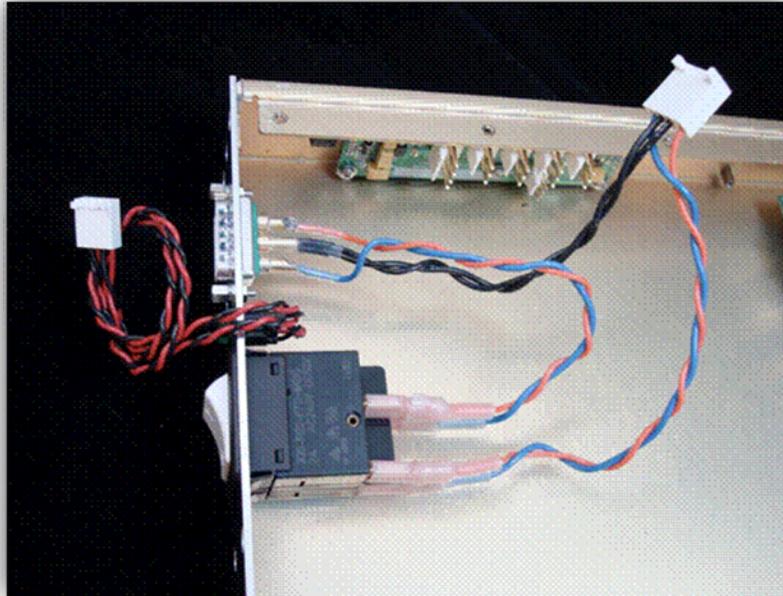
Voltage Type	Wire Color
Positive	Orange
Ground or Neutral	Black
Negative	Blue

The black wires go directly to the 4-pin Molex connector (Digikey p/n WM2113-ND) after the terminals (Digikey p/n WM2305-ND) are crimped and the orange and blue wires are terminated with female crimp on terminals (Digikey p/n 9220044-18-ND). These terminals have shrink tubing strain reliefs built in.

The orange and blue wires are then connected to the ETA 2A circuit breaker (p/n 3130-F120-P7T1-W02Q-2A). A second set of wires are then assembled with the female terminals and the Molex connector terminals. These will connect the circuit breaker to the 4-pin Molex connector housing, in the manner shown in the photo. This connector attaches to P1 on the regulator PCB.

After installing the rear panel power indicator LEDs, each lead will have a smaller Molex terminal (Digikey p/n WM2624-ND) crimped on for use with a 0.100", 4-pin Molex connector housing (Digikey p/n WM2614-ND). Take care to orient the leads in the connector so that it matches the labels on the power regulator PCB and the rear panel of the chassis. Cable assemblies will be constructed with 3-pin, 0.156" Molex connectors (Digikey p/n WM2112-ND), the associated terminals and 18 AWG blue, orange and black wires. Refer to Figure 2 and LIGO-D1002034 for the wire arrangement with regards to the connector polarity keying. These will provide DC voltages to the individual circuit boards in the chassis. The lengths of each assembly custom cut to match the particular chassis being built.

**Figure 1, Breaker, Power Feed and LED Wiring**



**Figure 2 Individual Wiring Harness for DC to a PCB**

