

**LASER INTERFEROMETER GRAVITATIONAL WAVE
OBSERVATORY**

-LIGO-

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NPRO DC-DC Converter Test Procedure		
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1 Overview

The NPRO DC-DC Converter Module was implemented to physically remove the DC-DC converter from within the NPRO module. This was done to address noise that was coupling to the optical output of the laser by either radiative or conductive coupling. This module uses the same DC-DC converter as is in the NPRO, but is better filtered and the advantage of distance.

This procedure verifies that the unit is putting out the correct voltages under simulated load conditions, and that the hand wired connections from input to output are done correctly.

1.1 Test Equipment

The following test equipment is necessary:

- DC power supply (capable of +5VDC)
- Fluke multi-meter or equivalent
- Two 150 Ohm, axially leaded resistors to use as test loads

1.2 Continuity Checks

Verify and record that the resistance measurements of Table 1 below are correct using the Fluke Multi-meter.

Table 1 Continuity Checks

Input	Output	Check if continuity is OK between the indicated pins and no adjacent shorts to other pins are found
Black Neutrik Connector Pin-1 (-5V)	White Male Molex Connector Pin-1	
Black Neutrik Connector Pin-2 (+5V)	White Male Molex Connector Pin-5	
Black Neutrik Connector Pin-3 (+5VTEC)	White Male Molex Connector Pin-4	
Black Neutrik Connector Pin-4 (GND)	White Male Molex Connector Pin-3	

1.3 Voltage Measurements

- Connect a DC power supply that has been previously adjusted to +5VDC to the board under test, +5 to Pin-2 and GND to Pin-4 of the black, male Neutrik connector.
- Turn on the power supply and record the quiescent current

Quiescent Current _____ mA (Nominal is 70 +/- 10mA)

- Turn off the power supply
- Using clip leads, connect one of the 150 ohm resistors between pins 2&3 of the white male Molex connector.
- Connect the other 150 ohm resistor between pins 3&6 of the white male Molex connector.
- Turn on the power supply.

Verify that the voltages in Table 2 are as indicated

Table 2 Voltage Measurements

Positive Connection to Fluke	Negative Connection to Fluke	Expected Voltage	Check if OK
White Male Molex Connector Pin-2 (+12V)	White Male Molex Connector Pin-3	+12V +/- 0.5V	
White Male Molex Connector Pin-6 (-12V)	White Male Molex Connector Pin-3	-12V +/- 0.5V	
White Male Molex Connector Pin-1(-5V)	White Male Molex Connector Pin-3	0V +/-5mV	
White Male Molex Connector Pin-4 (+5VTEC)	White Male Molex Connector Pin-3	0V +/-5mV	
White Male Molex Connector Pin-5 (+5V)	White Male Molex Connector Pin-3	Same as power supply	