



 arroyo instruments

1602-04

Low Noise Filter

The 1602-04 Low Noise Filter is a common-mode filter designed to improve the noise performance of Arroyo Instruments laser diode drivers. Housed in a machined enclosure, the 1602-04 has standard DB9 connectors, and is inserted between the cable and the laser diode driver. It is designed to be used with our 4200, 6300, and 685 Series controllers (see below for use with 4300 or 485 Series controllers).

The filter works by reducing the AC impedance of the diode driver output, which is naturally-high impedance and therefore susceptible to noise pickup. This will not affect the DC performance of the laser diode driver.

The laser diode driver should be operated in low-bandwidth mode for optimal performance. While modulation with the filter installed is possible, the filter should be removed for modulation rates above 10 Hz.

The 1602-04 includes pass-through connections for interlock, photodiode and 4-wire laser voltage sense pins. Only pins 5 and 9 are filtered by the 1604-02.

DB-9 Pin	Description
1-4, 6-8	Pass-through pins
5	Laser Cathode
9	Laser Anode
Shell	Earth Ground

Connector Pin-Outs (Both Ends)

Connecting the filter to your controller

Use the included 3/32" Allen wrench to attach the 1602-04 to your driver. Tighten screws until snug (do not over-tighten).

Using the 1604-02 with 4300 or 485 Controllers

To use the 1604-02 with 4300 or 485 Controllers, you must disconnect pins 4 and 8 on the male end of the cable (where it connects to the 1602-02), or otherwise ensure that current is not flowing on pins 4 and 8.