

LASER DIODE CONTROL ELECTRONICS AND MOUNTING MODULE – SF8150-10

LASER DIODE CONTROL ELECTRONICS & MOUNTING MODULE



ADVANCED PERFORMANCE HYBRID LASER DIODE CONTROL ELECTRONICS & MOUNTING MODULE

- ◇ An All-Inclusive Laser Diode Control Solution:
 - Low Noise Laser Diode Current Source
 - TEC Controller
 - Butterfly Package Laser Diode Mount
- ◇ Complete Protection for Your Laser Diode:
 - Soft-Start Current Ramp
 - User Set Current Limit
 - User Set Temperature Limit
 - Zener Diode to Shunt Power Surges
- ◇ On-Board Potentiometer Controls
- ◇ PC Control Through RS232 or USB
- ◇ Analog Control Signals Connector to Simplify Integration into a Laser System Product
- ◇ Free Control Software with GUI

Semiconductor Laser Sources and Control Instruments



Laser
Diode
Controllers



ALL-ENCOMPASSING PROTECTION FOR YOUR LASER DIODE

On-Board Component Level Protection Against Input Power Surges and Reverse Voltage Transients:

An integrated on-board zener diode in parallel with the bias current path protects the laser diode from damage which can occur from reverse voltage transients. These transients can occur when a standard DC power supply source is momentarily interrupted due to a black-out or brown-out power outage.

User Adjustable Current and Temperature Limits:

The user can set current limit and temperature limits through on-board potentiometers. Limits can also be set using your PC through the included control software. Finally, limits can be set using the analog control signals input. Setting limits are necessities to ensure a long life-time for your laser.

Soft-Start Current Ramp:

There is an internal 500 millisecond soft-start ramp to the current set-point. This reduces the potential for thermal shock to the laser at power ON and is used to ensure good electrical contact prior to fully applying the current bias the laser diode.

Additional External Over-Temperature Monitor/ Shut-Down Input:

Primarily designed for integration of the module into a laser system, an additional thermistor input is provided to allow the user to monitor the temperature from an external measurement point. This can then be used to shut the laser diode off if a temperature maximum for the system is exceeded.

Laser Diode Bias Current and DC Power Shunting Clips:

These module ship with a jumper clip that shunts the laser diode bias current path of the driver to protect the laser from ESD or static discharge when the user is installing the laser into the mounting socket. This shunt also protects the laser when the user is connecting the DC power or any other external equipment.

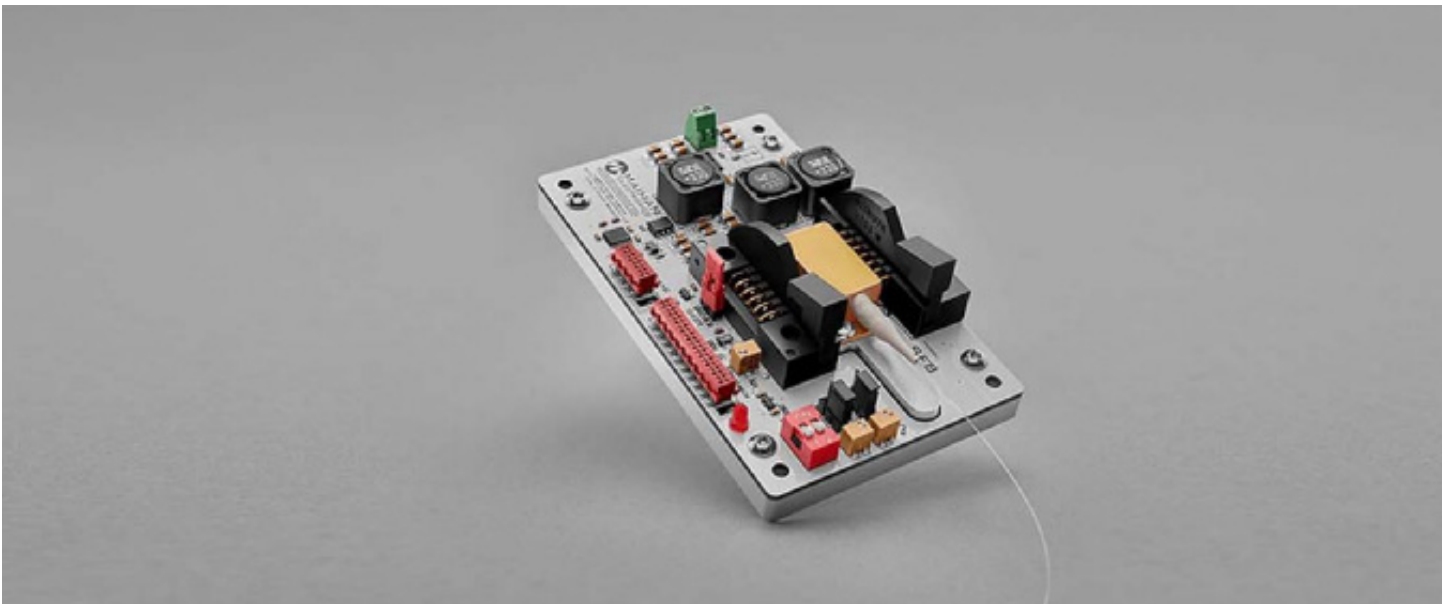


Advanced Performance Laser Diode Control and Mount Module:

These hybrid laser diode control electronics and mounting modules offer an all-inclusive, high performance solution for controlling butterfly packaged laser diodes. These controllers are an excellent choice for integration into a laser system product or as an affordable solution for laboratory test set-ups. Key features of these modules include a low noise laser diode current source to safely electrically bias your laser diode, an Integrated TEC Temperature controller and a 14-pin butterfly package mounting socket. They also include multiple control interface options to enable you to control all of the parameters of your laser diode. Interfaces include on-board potentiometers, an RS232 interface, a USB interface and an analog control signals connector.

Small Footprint:

Careful selection of components and exacting design criteria allows the modules to provide complete control of your laser in a 61mm x 101mm package. They have a 10mm thick aluminum base plate which provides excellent heat dissipation and keeps the laser diode safely operating within your desired operating temperature range. The module base plate comes with 4 mounting through-holes, 3.2mm each, to bolt the module directly to an instrument chassis or any thermally conductive surface.





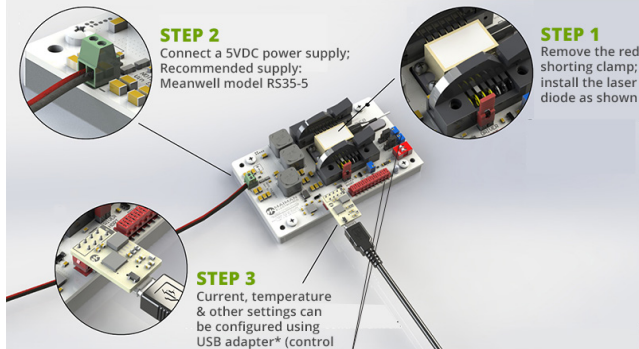
Product includes control software GUI for simple set-up and monitoring of your laser diode; alternately - you can use the trim pots on the board or the analog control connector



Software opens when you connect the USB adapter board; USB adapter board is included with shipment

SET-UP DIAGRAM

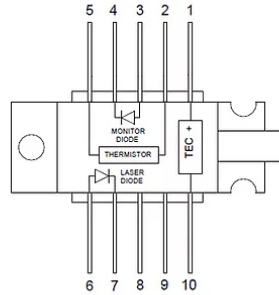
Fast, simple 3 step set-up and operation



Alternately, the user can use the on-board trim potentiometers and/or the red analog signal control connector



Pinout



№	Description	№	Description
1	TEC Anode	10	TEC Cathode
2	Thermistor	9	n/c
3	Monitor PD Anode	8	n/c
4	Monitor PD Cathode	7	LD Cathode
5	Thermistor	6	LD Anode

Recommended / Compatible DC Power Supplies Available to Purchase with this Control Electronics & Mount Module

Affordable General Purpose Switch Mode DC Power Supply:

Mean Well LRS-35-5 (5V, 7A)
Good choice for pump lasers
(ie 808nm, 976nm, 980nm)



More Expensive Low Noise Linear DC Power Supply:

Condor HC5-6-OV-A+G (5V, 6A)
Linear supply for lower noise performance; best suited for single frequency laser diodes
(ie DFB, DBR)





SF8150-10 SPECIFICATIONS

CURRENT, VOLTAGE & TEC CONTROLLER

- Output current LD (I): 1500 mA
- Output voltage LD (V): 0.5-3 V
- Current stability: 0.05 %
- Current set accuracy: 1 %
- Output current noise: 10 - 15 μ A
- TEC output current: \pm 4A
- TEC output voltage: \pm 4V
- TEC output current ripple: 2 - 4 mA
- Temperature Control Range: +15 to +40 $^{\circ}$ C

LASER DIODE PROTECTION

- Current limit
- Temperature limit
- Reverse current protection
- ESD and transient protection
- Soft-start laser diode current ramp

DIMENSIONS AND WEIGHT

- Dimensions 101.6 x 61 x 18.56 mm
- Weight: 136 g

USER INTERFACE

- Trim Potentiometers for Driver Current and TEC Power
- Analog Voltage Control
- RS232/UART Digital Interface
- USB Optional: \$25.00 (Option UART-USB)

INPUT

- Input voltage range (V_{in}): 5 V
- Recommended Linear / Switching Power Supply Options:
- Condor HC5-6-OV-A+G Linear Power Supply for better low-noise performance, narrow DFB laser line width
- Mean Well LRS-35-5, Switching Power Supply more economical; ideal for pump lasers

SHIPPING KIT (INCLUDED PARTS)

- SF8100 Control and Mount Module – 1 pcs
- 50 cm ribbon cable with one 8-pin connector – 1 pcs
- 50 cm ribbon cable with one 20-pin connector – 1 pcs
- Datasheet & User Manual – 1 pcs

WARRANTY PERIOD

- 1-year manufacturer's warranty



PRODUCT WARRANTY:

This product is sold with a full one year warranty. The warranty includes all parts and labor. It is warranted to be free from defects in material and workmanship for a period of one year from the date of shipment. The warranty does not include damage to the product due to customer mishandling or use of the product outside of its specified maximum ratings.

INSTALLATION SUPPORT OR TECHNICAL SUPPORT FOR THIS PRODUCT:

800-887-5065 extension 1
contact@laserdiodesource.com



LASER DIODE
TECHNOLOGIES

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