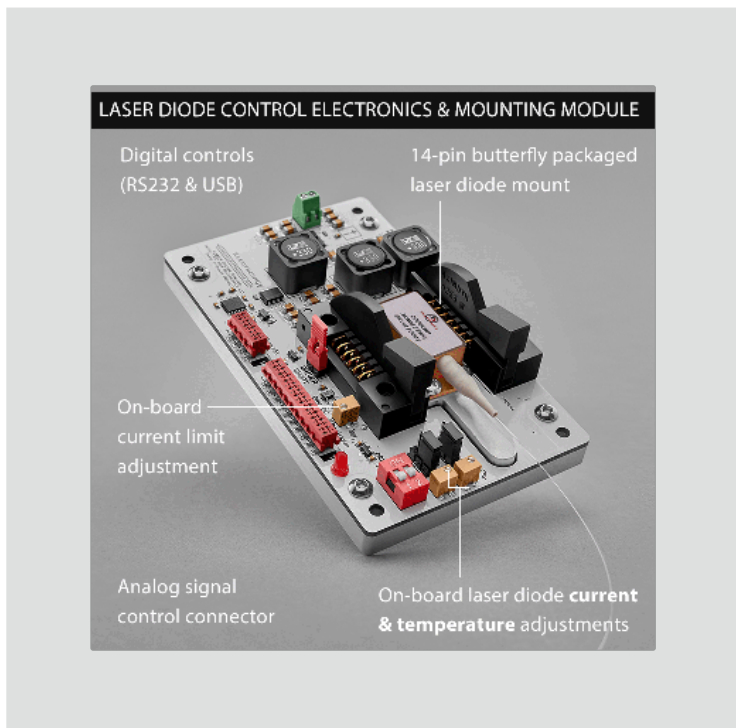


## LASER DIODE CONTROL ELECTRONICS AND MOUNTING MODULE – SF8025-ZIF14



### 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.

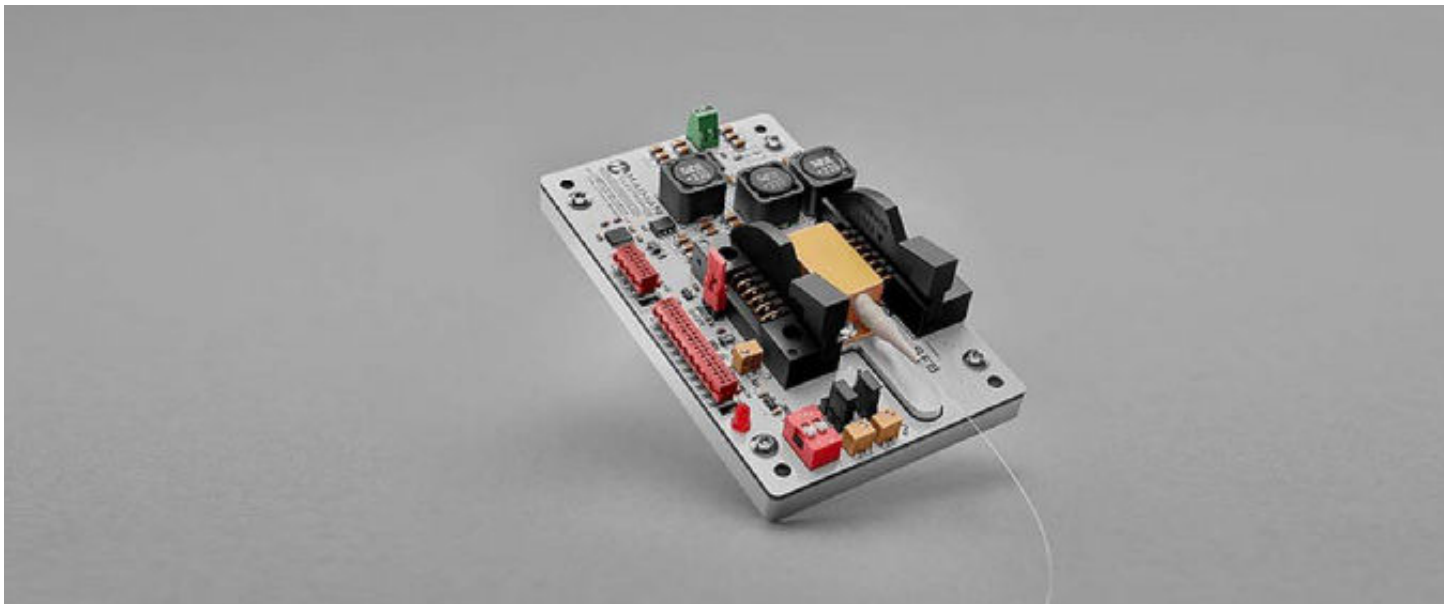


### **Advanced Performance Laser Diode Control and Mount Module:**

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.





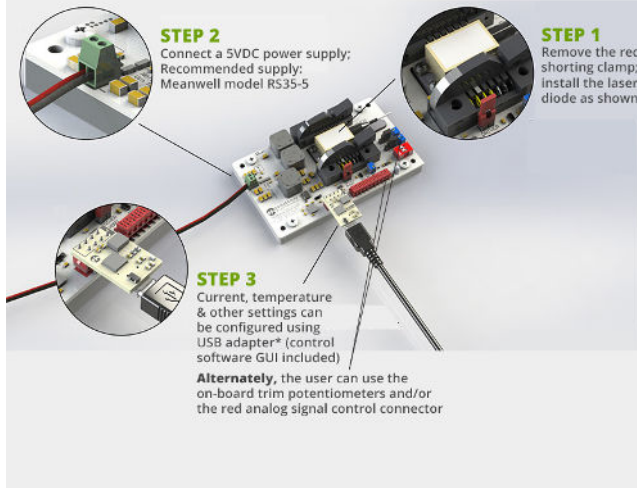
Product includes control software GUI for simple set-up and monitoring of your laser diode; alternately - you can use the trim pots on the board or the analog control connector



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

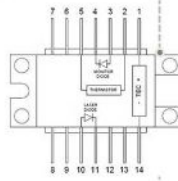
### SET-UP DIAGRAM

*Fast, simple 3 step set-up and operation*



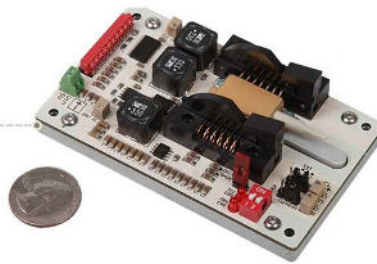


Standard product is configured  
for **Type-1** Laser Diode Pin Configuration  
*(Type-2 also available)*



No	Description	No	Description
1	TEC Anode	14	TEC Cathode
2	Thermistor	13	n/c
3	Monitor PD Anode	12	n/c
4	Monitor PD Cathode	11	LD Cathode
5	Thermistor	10	LD Anode
6	n/c	9	n/c
7	n/c	8	n/c

Heat sink with  
mounting holes for  
simple attachment  
to optical table or  
instrument chassis



**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 HCS-6-0V-A+G (5V, 6A)*  
Linear supply for lower noise  
performance; best suited for  
single frequency laser diodes  
(ie DFB, DBR)





## SF8025-ZIF14 SPECIFICATIONS

### CURRENT, VOLTAGE & TEC CONTROLLER

- Output Current Range to the Laser Diode (I): 250 mA
- Output Voltage Range to the Laser Diode LD (V): 0.5-3 V
- Current stability: 0.1 %
- Current set accuracy:  $< \pm 1\%$
- Output current noise: 10-15  $\mu$ A
- TEC output power:  $\pm 4$ A
- TEC output voltage:  $\pm 4$ V
- TEC output current ripple: 2 ~ 4mA
- TEC Feedback Sensor: 10 kOhm Thermistor
- Temperature Control Range: +15 to +40 °C

### LASER DIODE PROTECTION

- Soft-Start Current Ramp
- Current limit
- Temperature limit
- Reverse current protection
- ESD and transient protection

### DIMENSIONS AND WEIGHT

- Dimensions 101.6 x 61 x 30 mm, quarter-brick
- Weight: 142 g

### USER INTERFACE

- Trim Potentiometers for Driver Current and TEC Power
- Analog Voltage Control Connector (Controls All Functions)
- RS-232 / UART/ USB

### INPUT POWER

- Input Voltage Supply (Vin): 5 VDC
- 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)

- Driver – 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
- USB-UART converter – 1 pcs

### WARRANTY PERIOD

- 1-year manufacturer's warranty

### PIN CONFIGURATION MODEL NUMBERS

- SF8025-ZIF14-TP2 (type 2 pin configuration)
- SF8025-ZIF14 (type 1 pin configuration)



**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](mailto:contact@laserdiodesource.com)**



**LASER DIODE**  
TECHNOLOGIES

Part of the Laser Lab Source Group:

[LaserLabSource.com](http://LaserLabSource.com)

[LaserDiodeSource.com](http://LaserDiodeSource.com)

[LaserDiodeControl.com](http://LaserDiodeControl.com)

Laser Diode Technologies

Laser Lab Source Inc.

1820 W. Lincoln Street

Bozeman, MT USA 59715

[contact@LaserDiodeSource.com](mailto:contact@LaserDiodeSource.com)

[contact@LaserDiodeControl.com](mailto:contact@LaserDiodeControl.com)

800-887-5065

800-887-5065