

# LDYHC High Current CW Diode Laser Drivers



The LDYHC series is a new family of high current OEM diode laser drivers designed for the emerging high power diode laser industry. The LDYHC series can be configured for output current levels up to 200 A.

The LDYHC series includes all the performance of the LDY Line laser diode drivers, with its additional functions including pulsing capability, over-temperature sensing and crowbar shorting of the output. The LDYHC series is ideal for high power applications where economy is important and performance cannot be compromised.

Power factor is greater than 0.99 and conducted emissions meet stringent European regulations. No additional line filter is required to meet EN 55011 emission requirements.

The LDYHC family has been designed with the knowledge that a high power laser diode is an expensive device. Rise and fall times are strictly controlled to reduce high voltage transients which could damage the laser diode.

## ADVANTAGES

- ◆ **Ideal for OEM applications**
- ◆ **Safe turn-on/turn-off**
- ◆ **Compact design**
- ◆ **Power factor correction**
- ◆ **Auxiliary +15V/-15V/+5V**
- ◆ **Low conducted emissions, low leakage**
- ◆ **ROHS Compliant**

## AVAILABLE POWER OUTPUTS ARE:

- ◆ **600W**
- ◆ **1000W**
- ◆ **1500W**
- ◆ **Output current up to 200A**





# LDYHC High Current Laser Diode Driver

## Interface

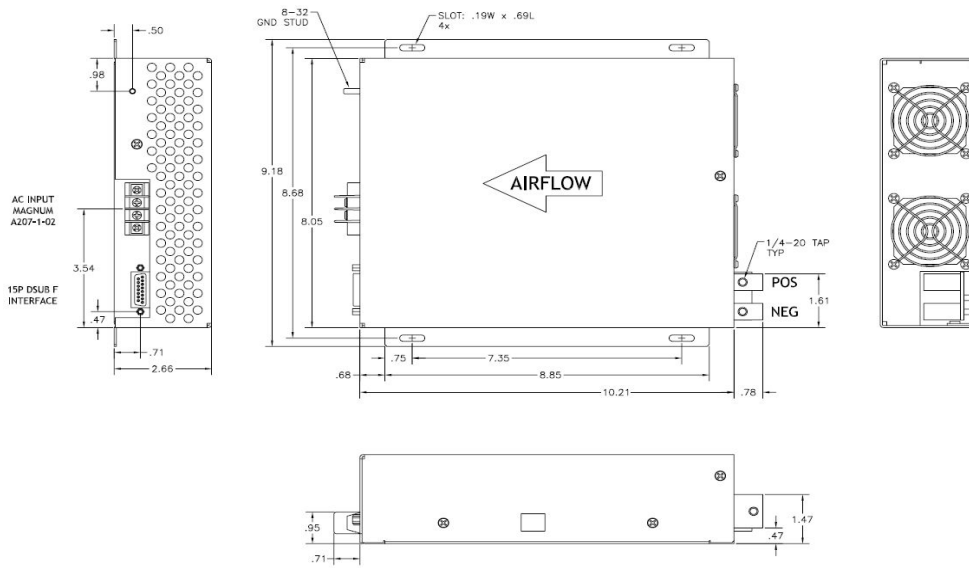
CONNECTOR TYPE: 15 PIN D-SUB FEMALE

Pin #	LDYHC Pin Name	Functional Voltage Level	Description
1	<b>Enable</b> (input)	High = RUN = +5V to +15V Low = OFF = 0V	The <b>Enable</b> function turns the output section of the power supply ON and OFF. When the power supply is enabled, current is delivered to load as programmed via <b>Iprogram(+)</b> , Pin 7, if the <b>Pulse Control</b> , Pin 8, is High and the <b>Interlock</b> , pin 3 is connected to interface <b>GND</b> . Rise times resulting from <b>Enable</b> are approximately 25msec. For pulsing, the <b>Enable</b> function should be set to ON, and the <b>Pulsing Control</b> , Pin 8, should be used.
2	<b>Crowbar Status</b> (output)	High = Crowbar ON = +5V Low = Crowbar OFF = 0V	The <b>Crowbar Status</b> reports the status of the shorting crowbar clamp across the output. The crowbar will short the output under two conditions: 1) When the output is not <b>ENABLED</b> via Pin 1, or, 2) if the output is <b>ENABLED</b> via pin 1 but the control circuitry has detected a no-load condition or a voltage requirement on the output that exceeds the maximum voltage rating of the unit. A TTL+5V signal on Pin 2 reports that the crowbar is shorting the output. To turn the crowbar off, an appropriate load must be connected to the LDYHC and the output must be turned off and on via Pin 1, <b>ENABLE</b> .
3	<b>Interlock</b> (input)	Open = OFF Connect to GND = RUN	The <b>Interlock</b> function must be connected to <b>GND</b> in order for output current to be delivered. It can be used for external interlock functions such as door or overtemp switches.
5	<b>*Vout Monitor:</b> (output)	0 - 10V = 0 - $V_{out_{max}}$	The output voltage of the supply can be monitored by <b>Vout Monitor</b> . For LDYHC's with a maximum rated output voltage less than 10V, <b>Vout Monitor</b> = Vout. For output voltages greater than or equal to 10V, 0-10V = 0 - $V_{out_{max}}$ .
6	<b>Iout Monitor:</b> (output)	0 - 10V = 0 - $I_{out_{max}}$	The output current of the supply can be monitored by <b>Iout Monitor</b> .
7	<b>Iprogram(+):</b> (input)	0 - 10V = 0 - $I_{out_{max}}$	The power supply output current is set by applying a 0-10V analog signal to <b>Iprogram(+)</b> .
8	<b>Pulse Control</b> (input)	TTL High = On TTL Low = OFF <b>Default = Off</b>	The output may be pulsed by applying a TTL signal to <b>Pulse Control</b> , pin 8. The amplitude of the output current pulse is determined by the voltage programmed via Pin 7, <b>Iprogram(+)</b> . Rise fall times of <1 msec are typical. Rise fall times of 700 usec can be achieved with special order. <b>When using the LDYHC as a CW diode driver, pin 8, the Pulse Control, must be set to TTL High in order for output current to be delivered. Pin 10, +5V, would be a convenient connection point for this. No output current will be delivered with pin 8 left unconnected.</b>
10	<b>+5V @ 0.5A</b> (output)		Auxiliary +5V power supply for user. Up to 0.5A output current capability.
11	<b>Over-Temp Warning</b>	TTL High = High Temp TTL Low = Temp OK	When temperature of main heat sink exceeds 65 Deg C, Pin 11, the <b>Over-Temp Warning</b> , will go to a TTL High to indicate unit is in danger of shutting down due to over-temperature condition. <b>When temperature of main heat sink exceeds 75 Deg C, unit will shut down.</b>
12	<b>-15V @0.5A</b> (output)		Auxiliary -15V power supply for user. Up to -0.5A output current available.
13,14	<b>+15V @0.5A</b> (output)		Auxiliary +15V power supply for user. Up to 0.5A output current available.
4,9,15	<b>GND</b>		Interface return

TABLE 1: LDYHC Interface

\* If maximum compliance voltage is less than 10V, **Vout Monitor** will read output voltage directly. If maximum compliance voltage is greater than 10V, then **Vout Monitor** will be scaled such that 0-10V = 0- $V_{out_{max}}$ .

# LDYHC Outline Drawings



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