JDS Uniphase

Product Bulletin

2110 Series Power Supplies
For Argon Ion Lasers

The 2110 Series power supplies are high-efficiency (>90%) switching-regulated power supplies with active filter technology for ultralow noise operation. Active filter technology is a very low-loss, wide-bandwidth modulation technique that reduces noise by a factor of four when compared to last-generation power supplies. The 2110 Series power supplies can be operated from standard voltage sources throughout the world without a transformer. Remote-control input/outputs are provided for the laser power monitor, tube current monitor, remote safety interlock, laser power adjust, and standby mode.

The Models 2111, 2112, and 2114 power supplies can operate from single-phase 100–240 Vac power sources. The Model 2113 power supply can operate from single-phase 200–240 Vac power sources.

Key Features
- High efficiency
- Switching regulated
- Active filter technology
- Ultralow noise operation
- Remote interface controllers

Applications
- For use with Model 2211, 2212, 2213, and 2214 laser heads

Compliance
- CE per specification EN 55011 and EN50082-2
- UL 1950 and 1262
- CDRH 21 CFR 1040.10
- CUL
- EN 60825-1, -2
- EN 60950, IEC 950 or EN 61010

Common Power Supply Specifications

Amplitude fluctuations:			
Maximum noise	20 Hz - 300 Hz (p–p)	0.1%	
	20 Hz - 20 kHz (p–p)	1.0%	
	20 Hz - 2 MHz (rms)	1.0%	
Maximum drift	[light control mode, (for 2 hours)]	1.0%	
Maximum warm-up time (minutes)		5	(Model 2013, 15 minutes)

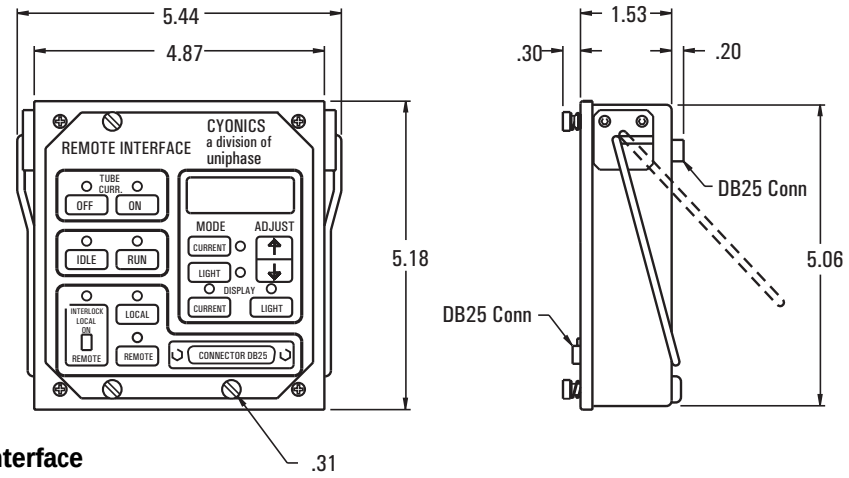
Input Power

Voltage (Vac ±10%)	100	120	200	208	220	240
Frequency (Hz)			47-63			
Phase			Single			
Maximum line current (A) with 2211 or 2214	20	17	12	12	10	10
-10SL, -20SL, -10GL, -15GL, -10BL, -20BL, -25ML, -40ML, -4VL, -5VL Heads with 2211 or 2214	23	19	13	13	12	11
-30SL, -20GL, -30BL, -65ML, -6VL, -100MLM Heads with 2212 Heads	12	10	8	7	7	6
with 2213 Heads	N/A	N/A	27	26	25	23

Remote Interface Description

Function	Pin numbers	Comments	
Laser output	Pin 7 apply + V	Apply 0 to 15 Vdc	
Power control*	Pin 11 return	Calibration = 30 mV/mW	10 kΩ input impedance
Laser current	Pin 6 apply + V	Apply 0 to 6.5 Vdc	
Control	Pin 11 return	Calibration = 0.5 V/A	10 kΩ input impedance
Laser output	Pin 8 + output V	30 mV/mW	
Power monitor*	Pin 11 return	0 to 12 Vdc	
Laser current	Pin 9 + output V	0.1 V/amp	
Monitor*	Pin 11 return	0 to 1.3 Vdc	
Laser idle/RUN	Pin 4 +	Pin 4 is at +15 Vdc for RUN	
	Pin 11 return	Ground for Idle. Pin 4 current is 3 mA (sink)	
Laser discharge	Pin 2 +	Pin 2 is at +15 Vdc for discharge ON. Ground for OFF. Pin 2 current is 0.15 mA (source)	
On/off	Pin 11 return		
Current or light	Pin 5 +	Pin 5 is at +15 Vdc for light	
Control	Pin 11 return	control. Ground for current control. Pin 5 current is at 3 mA (sink)	
DC power supplies	Pin 13 = +15 Vdc	20 mA available	
	Pin 12 = -15 Vdc	20 mA available	
	Pins 10, 11, 14, 20 thru 22, and 24 are returns	B common	
Chassis ground	Pin 25		
Interlock**	Pin 1	10 Vac, 100 mA shorted	
	Pin 3	These pins must be shorted before laser will operate	

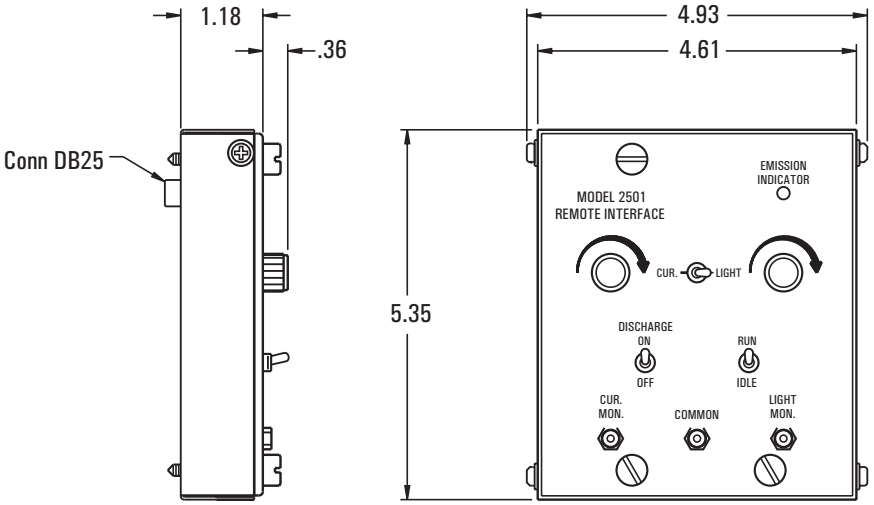
Note:
There is a 40-second delay on power up or on discharge on.
* For the 300 MLM, calibration = 10 mV/mW; for the 5 VL, calibration = 100 mV/mW.
** In compliance with CDRH regulations, any breaking of the interlock circuit causes a permanent laser shutdown. To restart after reestablishing the interlock circuit, turn the AC main power OFF for approximately 10 seconds, then turn it back ON.



Model 2500 Remote Interface

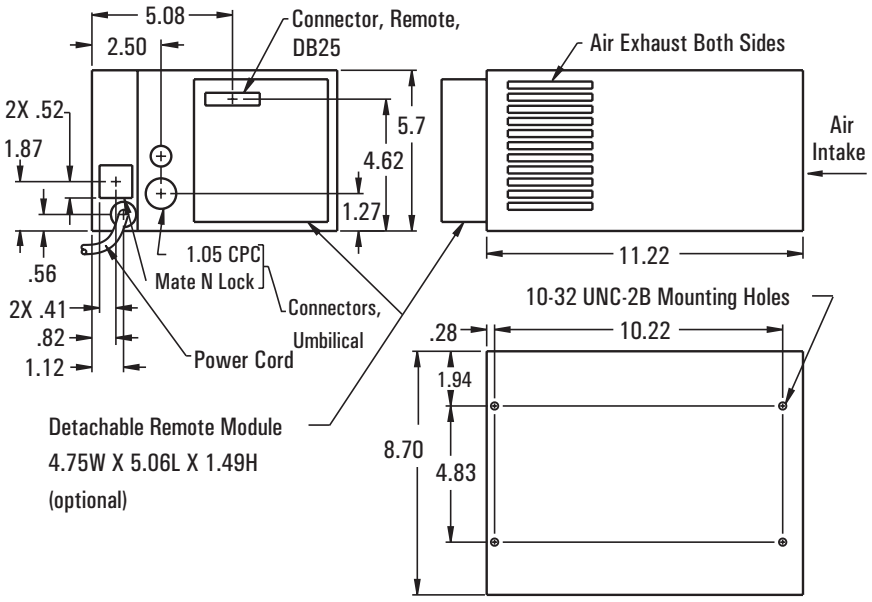
Remote Interface Controllers

The Model 2500 Series remote interface controllers (Models 2499, 2500, and 2501) allow the user to monitor and control output power and tube current from the remote interface of the 2111, 2112, 2113, and 2114 power supplies. The 2500 controller can be used while the host system is connected to the power supply via the remote interface. The 2500 has a liquid crystal display. The 2501 is a lower-cost version that has test points for a DVM to monitor the output power and tube current. The 2499 is the printed circuit board from inside the 2501.



Model 2501 Remote Interface

Models 2111, 2112, 2113, and 2114 Power Supply



Note: Dimensions in inches. Mounting screws must not penetrate more than 0.15 inch into the bottom of the power supply.

Ordering information

Indicate your requirements by selecting one option from each configuration table. For more information on this or other products and their availability, please contact your local JDS Uniphase sales representative or JDS Uniphase directly at 408 434-1800, or by fax 408 954-1177, or via email at sales.ca@us.jdsunph.com, or visit our Web site at www.jdsunph.com.

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