40W Power Supply for CO_2 Laser Tubes

It is combination of high quality & reasonable price. It has good compatibility, fast response speed, open circuit protection.

Ⅰ. Main Features

1) **Good compatibility**: It can be applicable to 40W and 30W laser tube.

2) **Fast response speed and effect.**

3) Dramatically lengthen the life of laser.

4) **Easy Control**: The start and stop of laser can be easily controlled by TTL level. And there are protection switch to test the external water, ventilation, etc.

5) **Easy control of laser power**: Both 0-5V analog signal and PWM signal can control the laser power.

6) The power supply has **open circuit protection**: Under the condition of good protective earthing, the power supply can work in open-circuit for a short time, which could avoid the damage of laser power supply because of the bursting of laser tube, thereby enhancing the life of power supply.

7) The power supply can take feedback interface which can be used in closed-loop control and testing the working current of laser.

8) The power supply adds a new function, that is timely scene judging which part is damaged, laser tube or laser power.

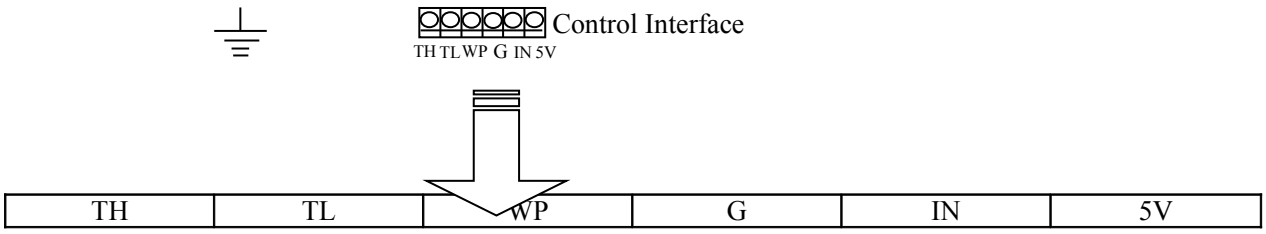
9) Application: acrylic sculpture, cut; fabric sculpture, cut; rubber sheet sculpture, cut, etc.

Ⅱ. Specification

Input	Input Voltage	AC220V or AC110V（to be specified when placing order）	
	AC frequency	47—440HZ	
	Cold Surge Current	≤60A(AC220V Input)	≤30A(AC110 Input)
	Current Leakage	≤ 0.7MA （ AC220V Input）	≤ 0.4MA(AC110V Input)
Output	Maximum Input Voltage	DC 25KV	
	Maximum Output Current	DC 20MA	
Efficiency	≥90%（full load）		
Mean Time Between Failure (MTBF)	≥10000H		

Response Speed	≤1ms（from the switch Signal is given to the output current up to 90% of the setting current）
Control Interface	TTL level switch control; high or low effective level can be chosen (details refer to the control terminal specification)
Withstand Voltage	Input-Output, Input-Shell: AC1500V 10MA 60S; Output negative is connected with machine shell.
Protection	can work in open-circuit condition for a short time （Require a good protective earthing and avoid arc between the positive and the machine shell）
Environment	Operating Temperature：-10~40℃）， Relative Humidity (RH)≤90%
Cooling Way	Force-Air Cooling (FAC)
Dimension	L×W×H=167*144*97(mm)

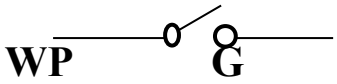
Ⅲ. Terminal definition



Terminal definition

TH	Input Signal	The control of laser: TH≥3V, emitting laser; TL≤0.3V, no laser.
TL	Input Signal	The control of laser: TH≥3V, emitting laser; TL≤0.3V, no laser.
WP*1	Input Signal	The control of laser: TH≥3V, emitting laser; TL≤0.3V, no laser.
G	GND	This foot must be connected well with the shell of laser machine and the ground of control board.
IN*2	Input Signal	The control of laser power: Both 0-5V analog signal and PWM signal can control the laser power.
5V	Output Power	Output 5V, the maximum output current is 20mA.

NOTE：1. WP can be used as detecting end of blower switch or water detection switch. If WP and ground are not connected by empty node like picture 1, but connected through optocoupler, the connection will be like picture 2.



Picture 1

Picture 2

2. When the laser power is controlled by PMW, the frequency of PWM must be equal or greater than 20 kHz and the amplitude (P-P) is smaller or equal to 5V.

Function of control interface:

TH	TL	WP	IN	Laser Output
hang in the air	Low(≤0.3V)	Low(≤0.3V)	0－5V or PWM	Emitting laser Power: P_{min}~P_{max}

	Low(≤0.3V)		hang in the air	Output 40% laser
	High(≥3V)		All value is ok	No laser
High(≥3V)	hang in the air		0－5V 或 PWM	Emitting laser, P_{min}~P_{max}
Low(≤0.3V)			hang in the air	Output 40% laser
Low(≤0.3V)			All value is ok	No laser
All value is ok	All value is ok	High(≥3V)		No laser

Ⅳ. The connection of power supply and control board

1. Recommended connection: High-level light control