

Figure 1.1. Front View of ACHV50WBT



Figure 1.3. 3D View of ACHV50WBT



Figure 1.2. Top View of ACHV50WBT



Figure 1.4. Rear View of ACHV50WBT

FEATURES

High precision

High efficiency

Fast response time

Open circuit protection

Force-air cooling (FAC)

Low cost

Overcurrent protection

APPLICATIONS

Applied in small laser engraving machine, CO2 laser cutter, laser marking machine, etc.

DESCRIPTION

The laser output power can be controlled by a 0~5V analog signal or PWM signal.

This power supply comes with 5V/1A DC voltage output, which can directly provide power to the motherboard. The AC voltage input and the signal port are at the same end, using plug-in terminals and XH-P signal terminals, which is suitable for 50W laser tubes.

The power supply circuit board features an open circuit protection function, to avoid damage to the power supply caused by the burst of the laser tube, thus extending the service life of the power supply. This power supply adopts Force-air cooling (FAC) as the cooling method.

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SAFETY PRECAUTIONS

1. The laser tube must be cooled with water when working.

2. The high voltage output end must not be open circuit. (The positive and negative ends of the high voltage output must be correctly connected to those of the laser.)

3. A discharge resistor has been integrated into the power supply, and the residual voltage can be discharged within two seconds after a power failure. But for safety reasons, pay attention to electric shock.

4. The laser power supply must use a three-hole socket with a ground terminal. The enclosure must be strictly grounded to avoid electric shock.

SPECIFICATIONS

Table 1. Characteristics. T_A = 25°C, unless otherwise noted.

Parameter	Symbol	Condition	Value	Unit/Note
AC Input Voltage	V_{VPS}	Adjusted with switch	220VAC/110VAC	V_{AC}
AC Frequency			47 – 440	Hz
Max Input Power			400	W
Max Input Current	$I_{INPUTMAX}$		3	A
Max Output Voltage	V_{OUTMAX}		28	kV
Maximum Output Current	I_{OUTMAX}		25	mA
Efficiency	η	Full load	≥90	%
Withstand Voltage			1500*	VAC
Mean Time Between Failure (MTBF)			30,000	h
Response Speed			≤1**	ms
Operating Temperature Range	T_{opr}		−30 ~ 65	°C
Storage Temperature Range	T_{stg}		−40 ~ 70	°C
External Dimensions			175×70×97	mm
Weight			1.8	g
			3.97	lbs
			63.50	Oz

Note:

* Input-Output, Input-Enclosure: no electrical breakdown at 1500VAC/10mA for 60 seconds.

**Time from the switch signal is given to the output current up to 90% of the setting current.

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CONNECTION BETWEEN POWER SUPPLY AND LASER

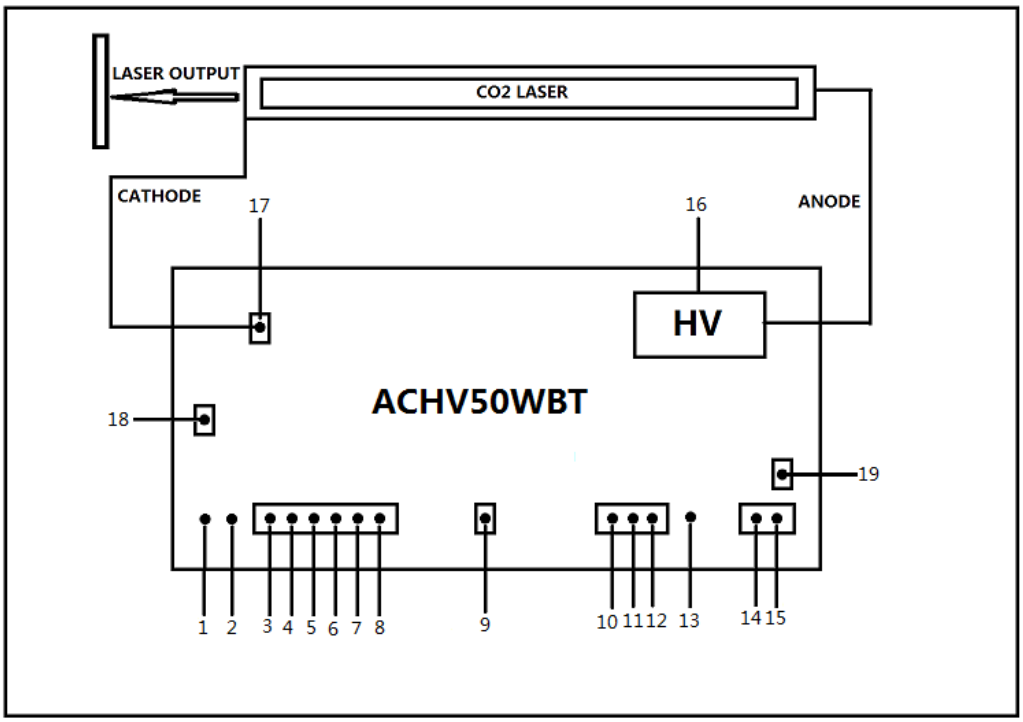


Figure 2. Connection between Power Supply and Laser

Table 2. Descriptions of terminals.

Terminal No.	Symbol	Description
1	TL indicator	TL working indicator.
2	WP indicator	WP working indicator.
3	TH	Laser emitting signal control. ≥3V indicates that the laser tube works, while ≤0.8V stops laser emitting.
4	TL	Laser emitting signal control. ≤0.8V indicates that the laser tube works, while ≥3V stops laser emitting.
5	WP	Water cooling or laser switch.
6	G	Grounding wire.
7	IN	Laser power control signal input.
8	5V	5V/1A anode output.
9	TEST	Test button for manual lighting, for easy testing or maintenance.
10	FG	The grounding wire connected to the enclosure.
11	AC	Connect to 220VAC or 110VAC.
12	AC	
13	LASER	Power supply indicator.

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Terminal No.	Symbol	Description
14	Switch	Switch between 230VAC  and 115VAC  .
15		
16	HV	Connect to the anode of the laser.
17	L-	Connect to the cathode of the laser.
18	Adj.	Power adjustment. Generally, it has been preset and do not adjust it.
19	GND	 The casing should be connected to ground.

FRONT AND REAR PANELS



Figure 3. Front Panel

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Figure 4. Rear Panel

NAMING INSTRUCTIONS

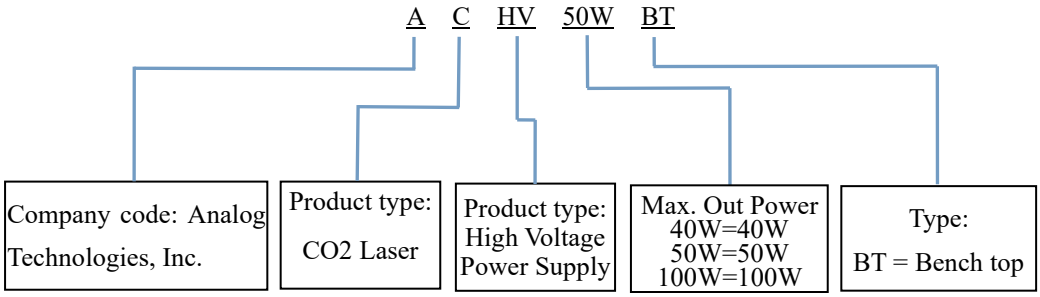


Figure 5. Naming Rules of ACHV50WBT

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DIMENSIONS



Figure 6. Dimensions of ACHV50WBT

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