



Figure 1. Physical Photo of ACHV40WBT

## 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 24V/3A and 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 25W to 40W 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.

## 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<sub>A</sub> = 25°C, unless otherwise noted.

Parameter	Symbol	Condition	Value	Unit/Note
AC Input Voltage	V <sub>VPS</sub>	Adjusted with switch	220VAC/110VAC	V <sub>AC</sub>
AC Frequency			47 – 440	Hz
Max Input Power			320	W
Max Input Current	I <sub>INPUTMAX</sub>		2.4	A
Max Output Voltage	V <sub>OUTMAX</sub>		25	kV
Maximum Output Current	I <sub>OUTMAX</sub>		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 <sub>opr</sub>		-30 ~ 65	°C
Storage Temperature Range	T <sub>stg</sub>		-40 ~ 70	°C
External Dimensions			160×140×90	mm
Weight			1192	g
			2.63	lbs
			42.05	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.



CONNECTION BETWEEN POWER SUPPLY AND LASER

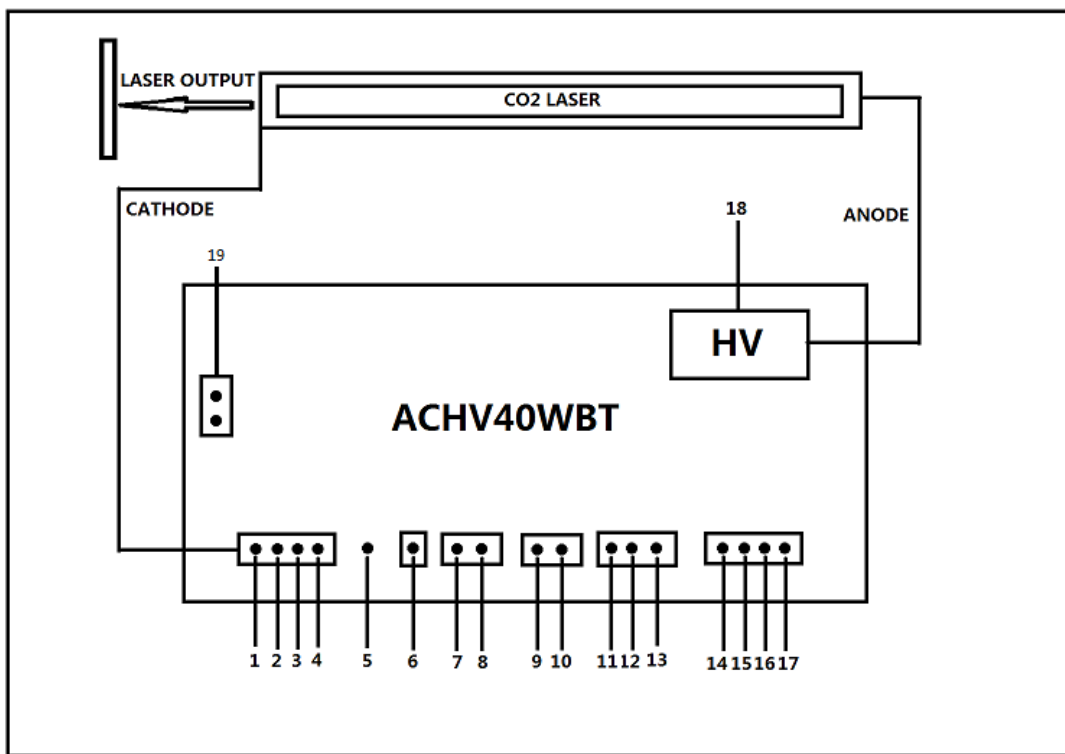




Figure 2. Connection between Power Supply and Laser

Table 2. Descriptions of terminals.

Terminal No.	Symbol	Description
1	L-	Connect to the cathode of the laser.
2	FG	The grounding wire connected to the enclosure.
3	L	Connect to 220VAC or 110VAC.
4	N	
5	POWER	Power indicator.
6	TEST	Test button for manual lighting, for easy testing or maintenance.
7	P	Water cooling or laser switch.
8	G	
9	K <sup>+</sup>	Water cooling or signal input.
10	K <sup>-</sup>	
11	G	Grounding wire.
12	IN	Laser power control signal input.



Terminal No.	Symbol	Description
13	5V	5V output is connected to the potentiometer. Control the laser power by IN.
14	24V	24V/1A anode output.
15	G	Grounding wire.
16	5V	5V/1A anode output.
17	L	Laser emitting signal control. Switch between 0V and 5V. 0V indicates that the laser tube works, while 5V stops laser emitting.
18	HV	Connect to the anode of the laser.
19	Switch	Switch between 230VAC  and 115VAC  .

FRONT AND REAR PANELS



Figure 3. Front Panel

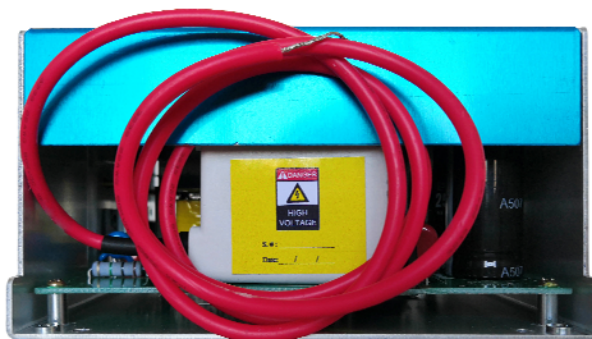


Figure 4. Rear Panel



**NAMING INSTRUCTIONS**

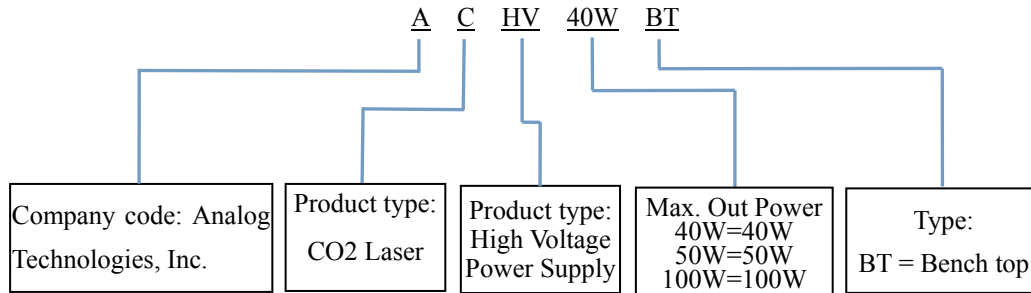


Figure 5. Naming Rules of ACHV40WBT

**DIMENSIONS**



Figure 6. Dimensions of ACHV40WBT

**PRICES**

Quantity (pcs)	1~9	10~49	50~99	≥100
ACHV40WBT	\$79	\$69	\$59	\$55



**NOTICE**

1. ATI warrants performance of its products for one year to the specifications applicable at the time of sale, except for those being damaged by excessive abuse. Products found not meeting the specifications within one year from the date of sale can be exchanged free of charge.
2. ATI reserves the right to make changes to its products or to discontinue any product or service without notice, and advise customers to obtain the latest version of relevant information to verify, before placing orders, that information being relied on is current and complete.
3. All products are sold subject to the terms and conditions of sale supplied at the time of order acknowledgment, including those pertaining to warranty, patent infringement, and limitation of liability. Testing and other quality control techniques are utilized to the extent ATI deems necessary to support this warranty. Specific testing of all parameters of each device is not necessarily performed, except those mandated by government requirements.
4. Customers are responsible for their applications using ATI components. In order to minimize risks associated with the customers' applications, adequate design and operating safeguards must be provided by the customers to minimize inherent or procedural hazards. ATI assumes no liability for applications assistance or customer product design.
5. ATI does not warrant or represent that any license, either express or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right of ATI covering or relating to any combination, machine, or process in which such products or services might be or are used. ATI's publication of information regarding any third party's products or services does not constitute ATI's approval, warranty or endorsement thereof.
6. IP (Intellectual Property) Ownership: ATI retains the ownership of full rights for special technologies and/or techniques embedded in its products, the designs for mechanics, optics, plus all modifications, improvements, and inventions made by ATI for its products and/or projects.