Figure 1. Physical Photo of AHVACN5KV1MABT

FEATURES

High precision

High efficiency

High output voltage stability

Linear modulation of output voltage

Low cost

Overcurrent protection

Short circuit protection

Digital display for output voltage

APPLICATIONS

AHVACN5KV1MABT, is designed for achieving AC-DC conversion from AC voltage to high DC voltage. High voltage power supply is widely used in industrial measurement and control, energy spectrum analysis, and medical equipment such as: X-ray machine, vacuum/plasma processing, semiconductor fabrication equipment, analytical instrumentation, medical diagnostic and therapeutic systems, test equipment, and research and academic applications, etc.

DESCRIPTION

Connect AC 100~240V input, and then power on. When the potentiometer is in "0", open the high voltage switch, and then adjust the potentiometer clockwise. Observe the digital display readings, and high voltage power supply output voltage = the reading × 10V. When the required voltage is achieved, then rotate the potentiometer lock clockwise to lock the potentiometer. This prevents the output voltage changes caused by rotating the potentiometer by accident. High voltage connection wire is used for high voltage output.

SAFETY PRECAUTIONS

High voltage power supply must be connected to ground reliably.

Do not touch the high voltage wire, unless the high voltage power supply is powered off, and the load and internal capacitors are fully discharged.

When the high voltage power supply is powered off, wait for another 5 minutes for fully discharging all the capacitors inside the power supply.

Do not operate the power supply in humid environment, and do not connect the operator to ground.

The internal protection circuit is provided in the high voltage power supply, but the high voltage short circuit shall be avoided.

Make sure the circuit is insulated perfectly, especially between the high voltage output and the surroundings so as to avoid electronic shock.

SPECIFICATIONS

Table 1. Characteristics.

T_A = 25°C, unless otherwise noted

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit/Note
AC Input Voltage		VPS		100	110	240	V_{AC}
Quiescent Input Current		I_{INQQ}	I_{OUT} = 0mA	22	27	32	mA
Full Load Input Current		I_{INFLD}	I_{OUT} = 1.0mA	80	85	90	mA
Input Voltage Regulation Ratio		$\Delta V_{OUT}/\Delta VPS$	VPS = 100V ~ 240V		0.5		%
Output Voltage		V_{OUT}	I_{OUT} = 0 ~ 1.0mA	0		-5000	V
Maximum Output Current		I_{OUTMAX}	VPS = 100V ~ 240V			1.0	mA
Load					5		MΩ
Potentiometer Adjustment				10k potentiometer			
Output Modulation Linearity					<1		%
Load Regulation Rate			I_{OUT} = 0 ~ 1.0mA		≤0.05		%
Instantaneous Short Circuit Current		I_{SC}			<20		mA
Full Load Efficiency		η			≥70		%
Temperature Coefficient		TCV_O	−20 ~ 50°C		<0.05		%/°C
Time Drift	Short Time Drift				<0.5		%/ min
	Long Time Drift				<1		%/h
Output Voltage Temperature Stability			−20 ~ 50°C		<±1		%
Operating Temperature Range		T_{opr}		−10		55	°C
Storage Temperature Range		T_{stg}		−25		65	°C
External Dimensions				180×120×50			mm
Weight					1192		g
					2.63		lbs
					42.05		Oz

PANEL INSTRUCTIONS

Left Panel

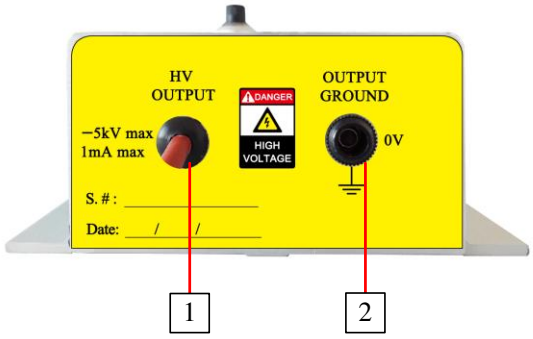

Figure 2. Left Panel

1. HV output: 1m long connection wire outputs -5kV 1MA.

2. Output ground: high voltage power supply output ground terminal.

Front Panel

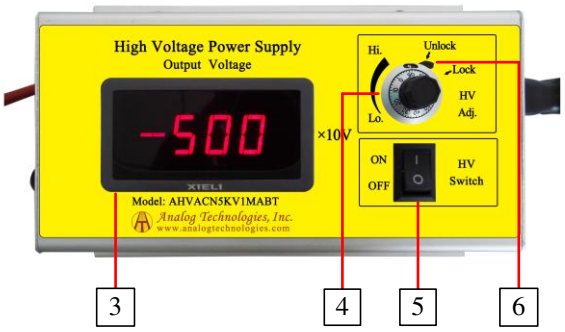

Figure 3. Front Panel

3. Output display: Digital display for output voltage. The actual output voltage = display reading × 10V.

4. HV adjustment: 10-turn potentiometer for adjusting output voltage. Rotate it clockwise to increase the output voltage, and the potentiometer resistance = the corresponding scale × 10Ω. For example, as Figure 4 shows, when the scale is 10, and the frame above the scale shows 1 (1kΩ), then the resistance =10×10Ω+1kΩ=1.1kΩ, and the like.

Figure 4. Scale and Resistance Calculation

5. High voltage ON/OFF switch

6. Potentiometer lock: when turn the lock clockwise, then the potentiometer is locked, so that the POT will not be rotated for any voltage change.

Right Panel

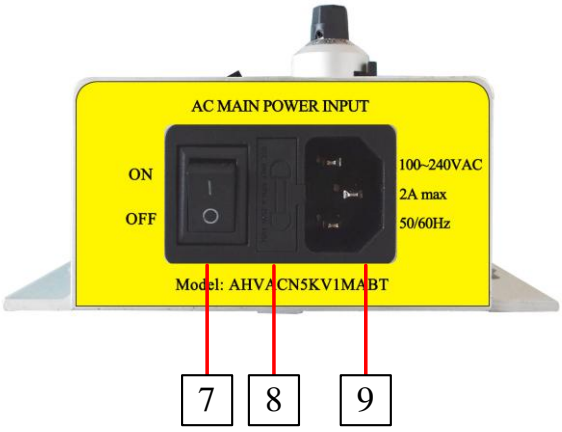

Figure 5. Right Panel

7. Main power ON/OFF switch

8. Fuse: 250V/2A

9. Input connector: AC input 100 ~ 240 50/60Hz connector.

TESTING DATA

High voltage power supply testing data (Test condition: the load is 5 MΩ)

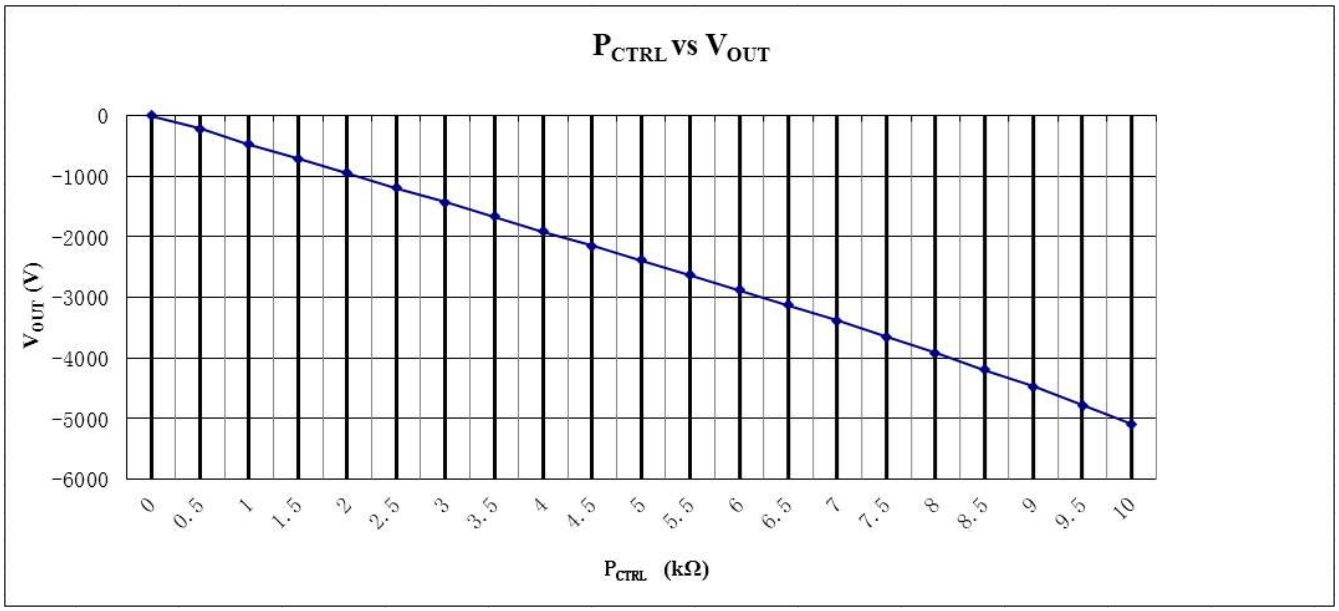

Figure 6. P_{CTRL} vs. V_{OUT}

NAMING INSTRUCTIONS

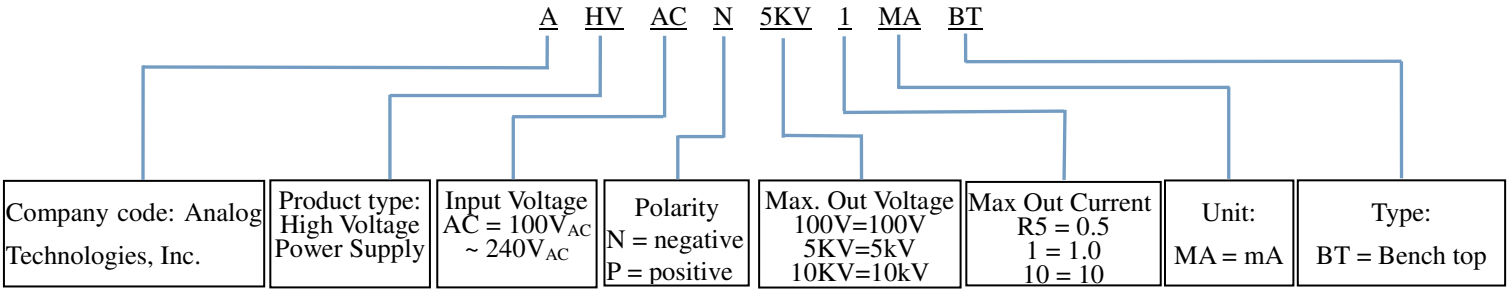

Figure 7. Naming Rules of AHVACN5KV1MABT

DIMENSIONS

I. Dimension of the leads.

Figure 8. Leads of AHVACN5KV1MABT

Leads	Diameter (mm)	Length (m)
Thick brown lead	4.5	1.0
Power cord	6.5	1.8

II. Dimension of AHVACN5KV1MABT.

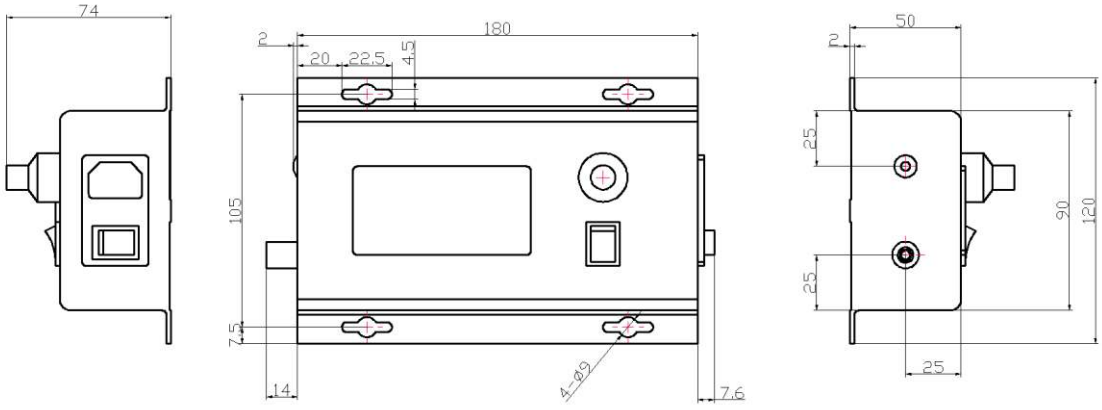

Figure 9. Dimensions for AHVACN5KV1MABT

PRICES

Quantity (pcs)	1~9	10~49	50~99	≥100
AHVACN5KV1MABT	$389	$379	$369	$359

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