

Figure 1A. Physical Photo of AXHV24VP10KV1MABT

FEATURES

- High precision
- High efficiency
- High output voltage stability
- Adjustable Integrated Filament Supply
- Local and Remote Emission Control
- Voltage & Current Programming
- Overcurrent voltage protection
- Arc and Short circuit protection
- Safety Interlock
- OEM Customization Available

APPLICATIONS

AXHV24VP10KV1MABT is a high stability high voltage power supply, which is widely used in scientific research and other fields including: X-ray Tube, Thickness Gauge, Nondestructive Detection, X-ray Fluorescence, X-ray Fluoroscopy, Density Measurement, ROHS testing, Plating Measurement, Radiography, X-ray Imaging, PCB Inspection, Density Measurement, Process Control, X-ray Spectroscopy, Mineral Analysis, Life Science.

DESCRIPTION

AXHV24VP10KV1MABT is a high voltage power supply for X-ray tubes with high stability. It is designed to drive



Figure 1B. Physical Photo of AXHV24VP10KV1MABT

a ground filament X-ray tube with an integrated X-ray tube filament power supply. The ground filament power supply voltage is adjustable from 0 to 5.5VDC and the current is adjustable from 0 to 3.5A.

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
Input Voltage	V _{VPS}		23	24	25	V _{DC}
Input Current	I _{INFLD}	I _{OUT} = 1mA			2.5	A
Output Voltage	V _{OUT}	I _{OUT} = 0 ~ 1mA	0		10000	V
Output Current	I _{OUT}	Full load	0		1	mA
Ripple		Bandwidth = 1MHz R _{LOAD} = 10 MΩ		<0.1		%V _{P-P}
Load			10		∞	MΩ
Output Control Mode			Local control 10k potentiometer or remote control 0 ~ +10V			
Monitor Voltage Out Impedance	Z _{VMON}			10		kΩ
Monitor Voltage	V _{MON}	V _{OUT} = 0 ~ 10kV	0		10	V
Monitor Current Out Impedance	Z _{VMON}			10		kΩ
Monitor Current	V _{MON}	I _{OUT} = 0 ~ 1mA	0		10	V
Output Voltage Display Accuracy				±1		%
Output Current Display Accuracy				±1		%
Remote Control Voltage		V _{CTRL} = 0 ~ 10V Z _{IN} = 10MΩ	0		10	kV
Local Control Voltage		R _P = 0 ~ 10kΩ	0		10	kV
Remote Control Current		V _{CTRL} = 0 ~ 10V Z _{IN} = 10MΩ	0		1	mA
Local Control Current		R _P = 0 ~ 10kΩ	0		1	mA
Voltage Relative Load Adjustment Ratio		R _{LOAD} = 0 ~ 10MΩ		0.01		%
Voltage Relative Input Adjustment Rate		V _{VPS} = 23V ~ 25V		<0.01		%
Current Relative Load Adjustment Ratio		R _{LOAD} = 0 ~ 10MΩ		0.01		%
Current Relative Input Adjustment Rate		V _{VPS} = 23V ~ 25V		<0.01		%
Filament Voltage			0		5.5	V
Filament Current			0		3.5	A
Instantaneous Short Circuit Current	I _{SC}			<100		mA
Full Load Efficiency	η			≥70		%
Temperature Coefficient	TCV _O	0 ~ 50°C		≤25		ppm/°C
Time Drift	Short Time Drift	After 30 minute warm up		<0.01		%/h
	Long Time Drift			<0.02		%/8h
Output Voltage Temperature Stability		0 ~ 50°C		<±0.01		%



Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit/Note
Operating Temperature Range	T _{opr}		0		50	°C
Storage Temperature Range	T _{stg}		-40		85	°C
Cooling		0~60W: Natural cooling; 60~100W: Air cooling				
Humidity		20%-85% relative humidity non-condensing				
External Dimensions			150x115x65		mm	
			5.91x4.53x2.56		inch	
Weight				1.55		kg
				3.42		lbs
				54.67		Oz

PANEL INSTRUCTIONS

Front Panel

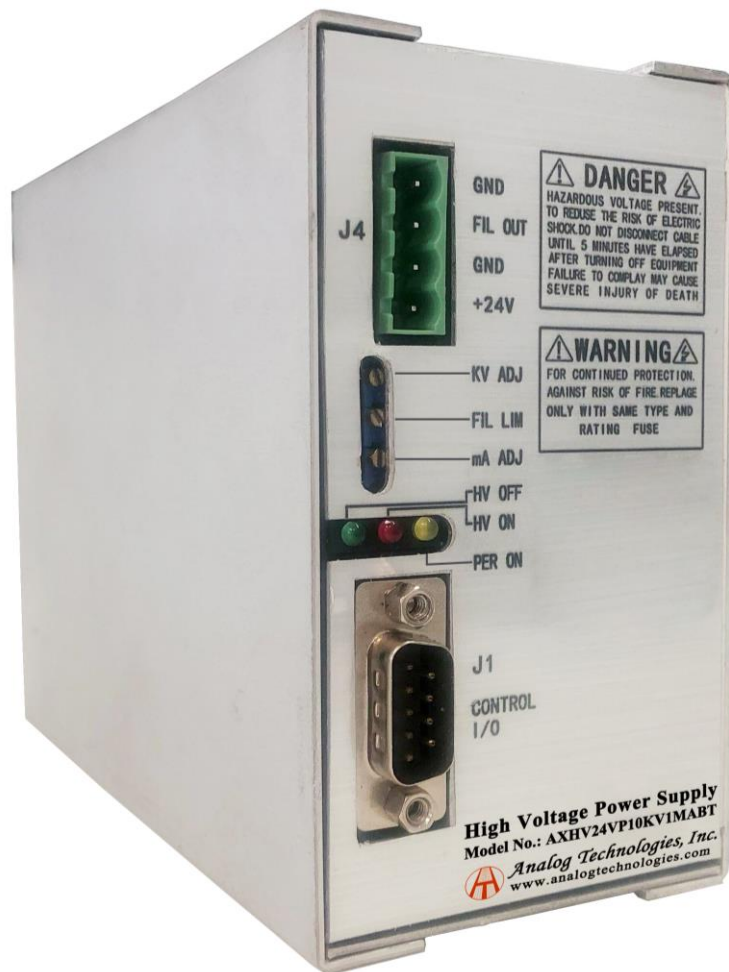


Figure 2. Front Panel



Table 2. J4 Simulate Port

No.	Name	Description
1	+24V	+24Vdc±1V, Maximum current 5A..
2	GND	Power Ground.
3	FIL OUT	Filament voltage is controlled by adjusting the FIL LIM potentiometer to the FIL OUT output, +5.5V@3.5A, maximum.
4	GND	Filament Ground.



Figure 3. Local Potentiometer Control



Figure 4. Indicator Light

Table 3. Local Control

Name	Description
KV ADJ	Local potentiometer controls voltage output.
FIL LIM	Filament controls the output.
mA ADJ	Local potentiometer controls current output.

Table 4. Indicator Light

Name	Description
HV OFF	Green light ON, HV OFF.
HV ON	Red light ON, HV ON.
PER ON	Filament power indicator.

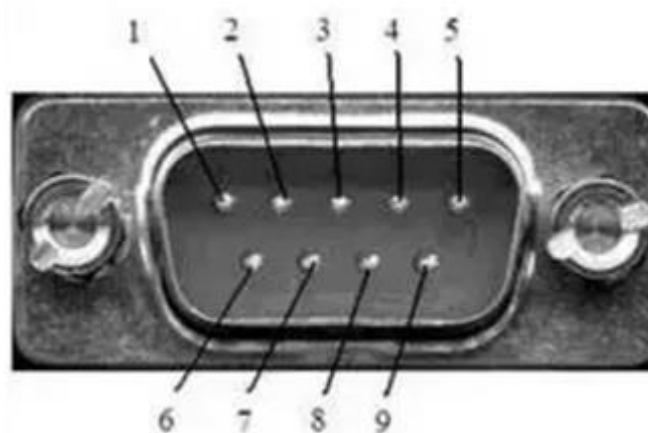


Figure 5. 9 Pin Type D Connector



Table 5. 9 Pin Type D Connector

No.	Name	Description
1	Reference Voltage	+10Vdc reference voltage.
2	Voltage Monitor	0 to 10V = 0 to 100% rated output, $Z_{OUT} = 10k\Omega$.
3	Remote Voltage Program In	0 to 10V = 0 to 100% rated output, $Z_{IN} = 10M\Omega$.
4	Local Voltage Control Output	Connect 3 and 4, control voltage from 0 to 10V = 0 to 100% rated output voltage by KV ADJ potentiometer.
5	Current Monitor	0 to 10V = 0 to 100% rated output, $Z_{OUT} = 10k\Omega$.
6	Remote Current Program In	0 to 10V = 0 to 100% rated output, $Z_{IN} = 10M\Omega$.
7	Local Current Control Output	Connect 6 and 7, control voltage from 0 to 10V = 0 to 100% rated output voltage by mA ADJ potentiometer.
8	External Interlock	Connected to ground, HV ON.
9	GND	Interlocking returns to ground.

Back Panel



Figure 6. Back Panel



TESTING DATA

High voltage power supply testing data (Test condition: the load is 10MΩ).

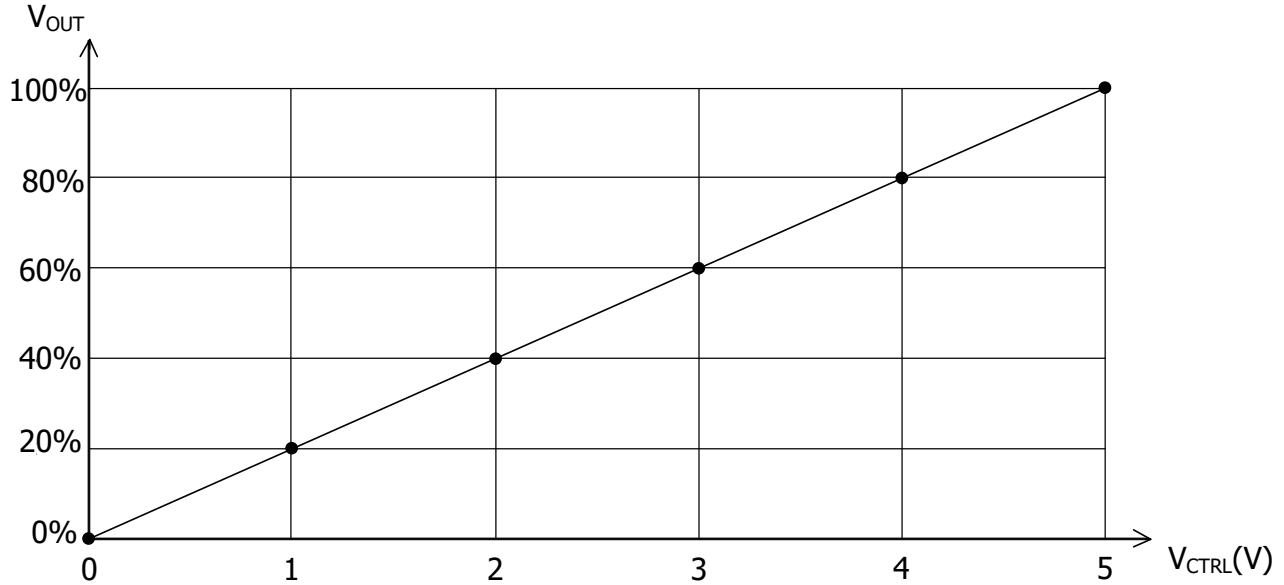


Figure 7. V_{CTRL} vs. V_{OUT}

NAMING INSTRUCTIONS

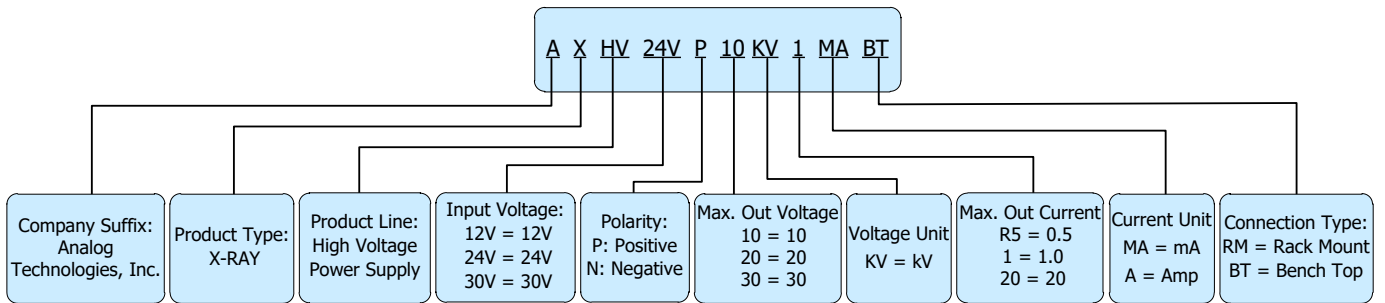
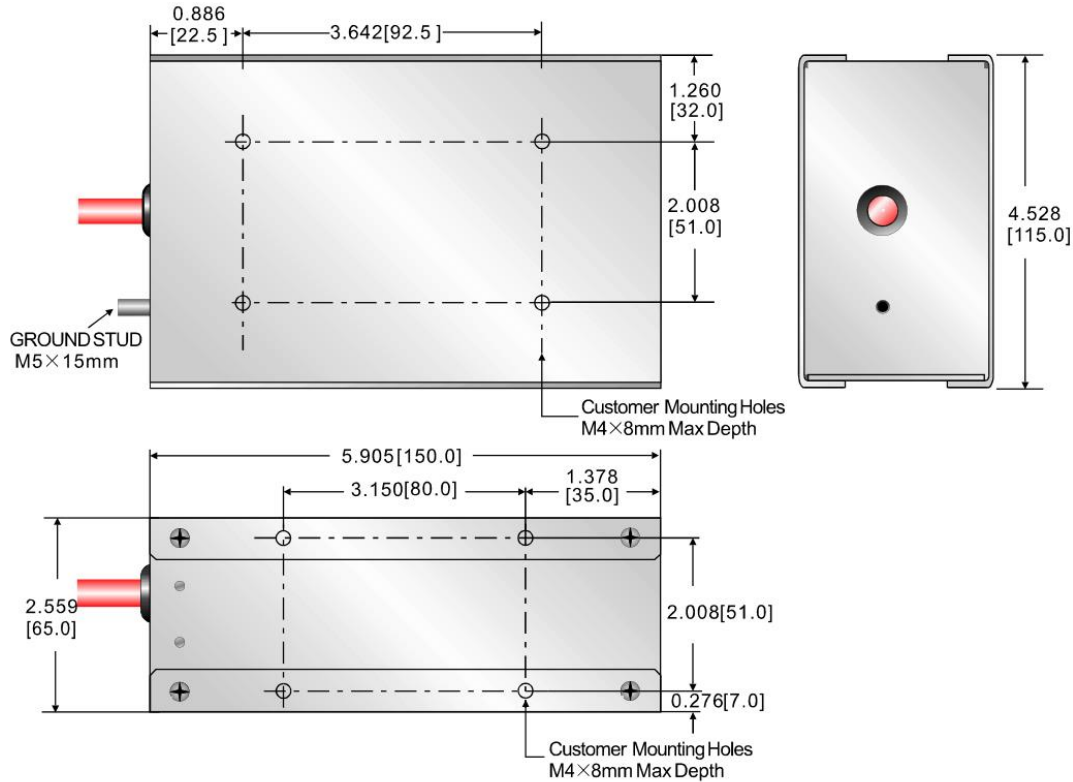


Figure 8. Naming Rules of AXHV24VP10KV1MABT



DIMENSIONS

Dimension of AXHV24VP10KV1MABT.



Unit: inch / mm

Figure 9. Dimensions for AXHV24VP10KV1MABT

ORDERING INFORMATION

Part Number	Buy Now
AXHV24VP10KV1MABT	* *

*: both and are our online store icons. Our products can be ordered from either one of them with the same pricing and delivery time.

NOTICE

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