wisman®
High voltage power supply
威思曼高压电源

ISO9001:2015

D|X-RAY GENERATOR

- OPTIONAL USB2.0,RS-232 OR RS-485 IS AVAILABLE
- 60kV AT 2mA. 100 WATT MAX
- 70kV AT 2mA. 100 WATT MAX
- ADJUSTABLE INTEGRATED FILAMENT SUPPLY
- OVER VOLTAGE ,ARC& SHORT CIRCUIT PROTECTION
- VOLTAGE & CURRENT PROGRAMMING
- LOCAL AND REMOTE CONTROL
- SAFETY INTERLOCK
- OEM CUSTOMIZATION AVAILABLE

INTRODUCTION

Wisman's XW Series of regulated X-ray power supplies offer output voltages 10kV~70kV and incorporate a filament supply which provides regulated dc current adjustable between 0.3A~3.5 A at 0~5.5V. High voltage and filament current can be linearly ramped up. The XW incorporates local and remote programming, safety interlock. short-circuit and overload protection. An optional USB 2.0,RS-232 or RS-485 is available.

TYPICAL APPLICATIONS

Grounded cathode X-ray tubes from Kevex, Oxford, RTW, Superior, Varian and Trufocus. ESD,Sulfur-detector X-ray fluorescence instrument, X-ray imaging, X-ray diffractometer,Non-destructive testing, Portable X-ray machine, Rohs detector, Precious metal detector,Life Science, Medical industry, Science experiment and so on.

XW SELECTION TABLE

kV	mA	P(W)	MODEL	kV	mA	P(W)	MODEL	kV	mA	P(W)	MODEL	kV	mA	P(W)	MODEL
10	1.00	10	XW10P10	30	2.17	65	XW30P65	60	0.17	10	XW60P10	70	0.93	65	XW70P65
	3.00	30	XW10P30		2.50	75	XW30P75		0.50	30	XW60P30		1.07	75	XW70P70
	5.00	50	XW10P50		3.33	100	XW30P100		0.83	50	XW60P50		1.43	100	XW70P100
	6.50	65	XW10P65	40	0.25	10	XW40P10		1.08	65	XW60P65	50	2.00	50	XW50P50-2
	7.50	75	XW10P75		0.75	30	XW40P30		1.25	75	XW60P75		2.00	75	XW50P75-2
	10.0	100	XW10P100		1.25	50	XW40P50		1.67	100	XW60P100		4.00	75	XW50P75-4
20	0.50	10	XW20P10		1.63	65	XW40P65	65	0.15	10	XW65P10	60	2.00	60	XW60P60-2
	1.50	30	XW20P30		1.88	75	XW40P75		0.46	30	XW65P30		2.00	75	XW60P75-2
	2.50	50	XW20P50		2.50	100	XW40P100		0.77	50	XW65P50		2.00	100	XW60P100-2
	3.25	65	XW20P65	50	0.20	10	XW50P10		1.00	65	XW65P65	65	2.00	60	XW65P65-2
	3.75	75	XW20P75		0.60	30	XW50P30		1.15	75	XW65P75		2.00	75	XW65P75-2
	5.00	100	XW20P100		1.00	50	XW50P50		1.54	100	XW65P100		2.00	100	XW65P100-2
30	0.33	10	XW30P10		1.30	65	XW50P65	70	0.14	10	XW70P10	70	2.00	65	XW70P65-2
	1.00	30	XW30P30		1.50	75	XW50P75		0.43	30	XW70P30		2.00	75	XW70P75-2
	1.67	50	XW30P50		2.00	100	XW50P100		0.71	50	XW70P50		2.00	100	XW70P100-2

XW SELECTION EXAMPLE

XW	70	P	100	-	2	VIP	10	VIM	10	TR	AX	/	XCC	/	B0.1
Series Number	Maximum Output Voltage (kV)	Output Polarity P: Positive N: Negative	Maximum Output Power (W)		Option Maximum Output Current (mA)	Option VP:Voltage Programming IP:Current Programming VIP:Voltage and Current Programming	Option 10:0~+10Vdc=0 to max. output 5:0~+5Vdc=0 to max. output	Option VM:Voltage Monitor IM:Current Monitor VIM:Voltage and Current Monitor	Option 10:0~+10Vdc=0 to max. output 5:0~+5Vdc=0 to max. output	Option Rs232 Rs485 USB2.0 ET	Option X=0,1,2,3,5,8,N. 0: No arc N :Arc but no fault	Option XCC: compatible XRW: HV cable (only 50W)	Option B : bias output 0.1: -100V (0.02~0.3 Option)

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SPECIFICATIONS

PARAMETER	DESCRIBE
Input Voltage	+24Vdc±10% ,5.0A maximum for 70W, 8.0A maximum for 100W.
Output Voltage	10kV, 20kV, 30kV, 40kV, 50kV, 65kV,70kV.
Stability	0.02% per 8 hours after 1/2 hour warm-up.
Temperature Coefficient	≤25ppm/℃.
Ripple	0.1% p-p of output voltage.
Voltage/Current Monitor	0~+10Vdc , Zout=10KW, Accuracy:±1%.
Local Voltage programming	Internal multi-turn potentiometer to set voltage from 0 to full output voltage.
Local Current programming	Internal potentiometer to set beam current between 0 to full output current.
Remote Voltage programming	0 ~+10Vdc proportional from 0 to full output voltage.Zin=10MW
Remote Current programming	0 ~ +10Vdc proportional from 0 to full output current.Zin=10MW
Voltage Load Regulation	0.01% of output voltage no load to full load.
Voltage Line Regulation	±0.01% for ±10% change in input voltage.
Current Load Regulation	0.01% of output current from 0 to rated voltage.
Current LineRegulation	±0.01% for ±10% change in input voltage.
DC Filament Supply	Current: 0.3~3.5A, adjustable, Voltage: 0~5.5V,Preheat.
Operating Temperature	0℃~+50℃.
Storage Temperature	-40℃~+85℃.
Humidity	20%~85% RH, non-condensing.
Cooling	Free convection for the 50Wunit and 70W unit,Fan (15CFM)assisted for 100W unit.

Dimensions			Weight
	1kV~60kV	4.00" H x 2.87" W x 8.00" D (101.6mm x 72.95mm x 203.2mm)	2kg
	60kV~70kV	4.00" H x 2.87" W x 9.00" D (101.6mm x 72.95mm x 228.6mm)	2.5kg

XW POWER INPUT/ FILAMENT OUTPUT CONNECTOR

SIGNAL			SIGNAL		
BIA ADJ	BIAS OPTIONAL	FIL-RET	GND	GND	GND
GND	GND	FIL-OUT	Filament Voltage output	DC	+24Vdc input

ANALOG INTERFACE CONNECTION

I/O	SIGNAL	PARAMETER
1	Ground	Ground
2	Voltage Monitor	0~+10Vdc=0 to full scale, Zout=10kW
3	Current Monitor	0~+10Vdc=0 to full scale, Zout=10kW
4	Interlock Output	Alternate Interlock Configurations
5	+10Vdc Reference	+10Vdc@ 1mA , maximum
6	Filament Monitor	1Vdc=1A, Zout=10kW
7	Voltage Program Input	0~+10Vdc = 0 to full scale, Zin=10MW
8	Local Voltage Program	10 turn pot , screwdriver adjust
9	Filament Limit Set point	1Vdc=1A, Screwdriver adjust
10	Current Program Input	0~+10Vdc = 0 to full scale, Zin=10MW
11	Local Current Program	10 turn pot , screwdriver adjust
12	No Used(+24Vdc Out for Interlock)	Optional Interlock Configuration
13	No Used(Interlock Coil)	Optional Interlock Configuration
14	Filament Preheat Setpoint	1Vdc=1A,Screwdriver Adjust
15	Ground	Ground

RS-232/RS-485 DIGITAL INTERFACE D

SIGNAL		SIGNAL	
1	N/C	6	N/C
2	TXD/Transmit Data	7	RS-485B
3	RXD/Receive Data	8	N/C
4	N/C	9	RS-485A
5	SGND		

XW ET DIGITAL INTERFACE D

SIGNAL			SIGNAL		
1	RX+	Receive data+	5	N/C	N/C
2	RX-	Receive data-	6	TX-	Transmit data-
3	TX+	Transmit data+	7	N/C	N/C
4	N/C	N/C	8	N/C	N/C

USB DIGITAL INTERFACE D

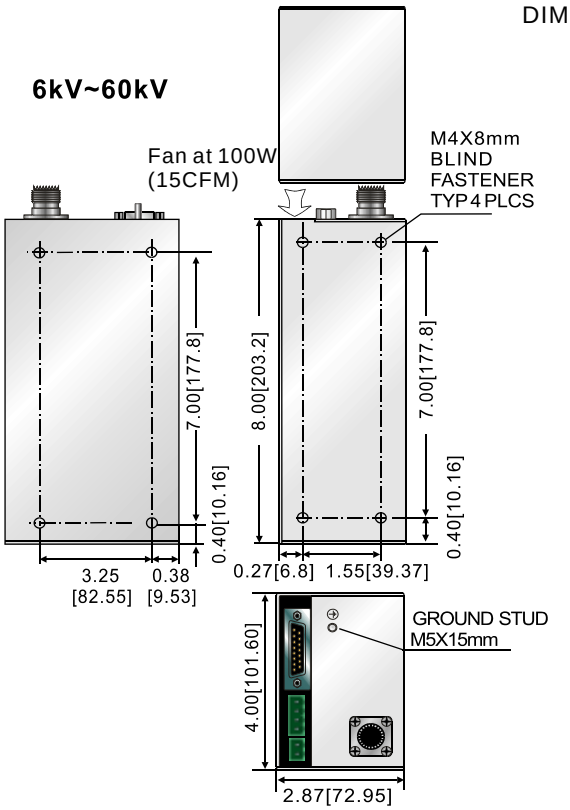
USB		SIGNAL	USB		SIGNAL
1	VBUS	+5Vdc	3	D+	Data+
2	D-	Data-	4	GND	Ground

D X-RAY GENERATOR

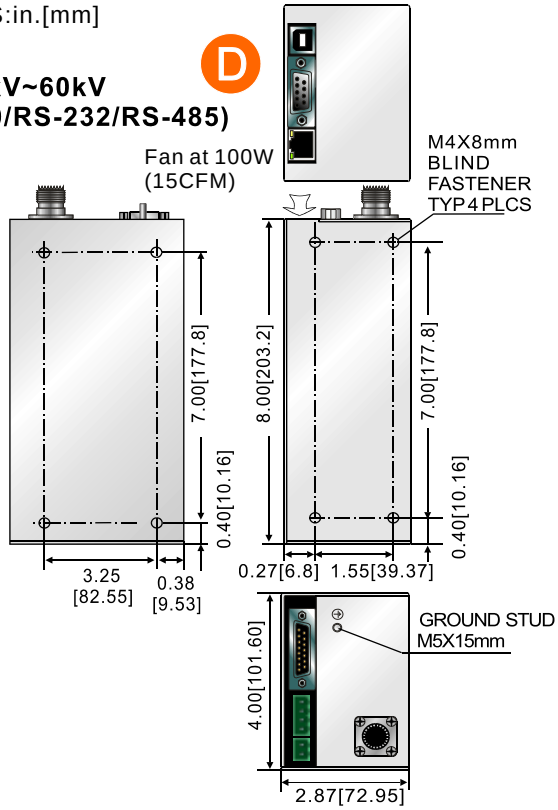
DIMENSIONS

DIMENSIONS:in.[mm]

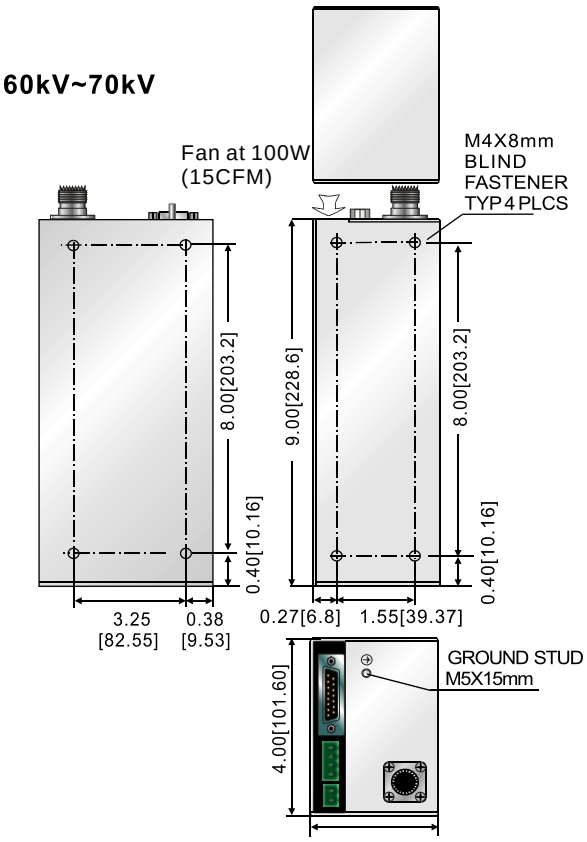
6kV~60kV



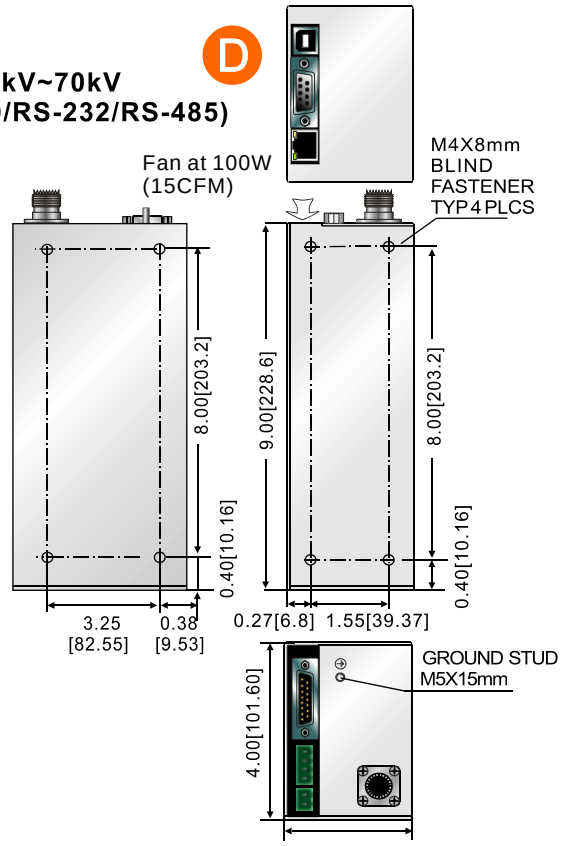
6kV~60kV (USB2.0/RS-232/RS-485)



60kV~70kV

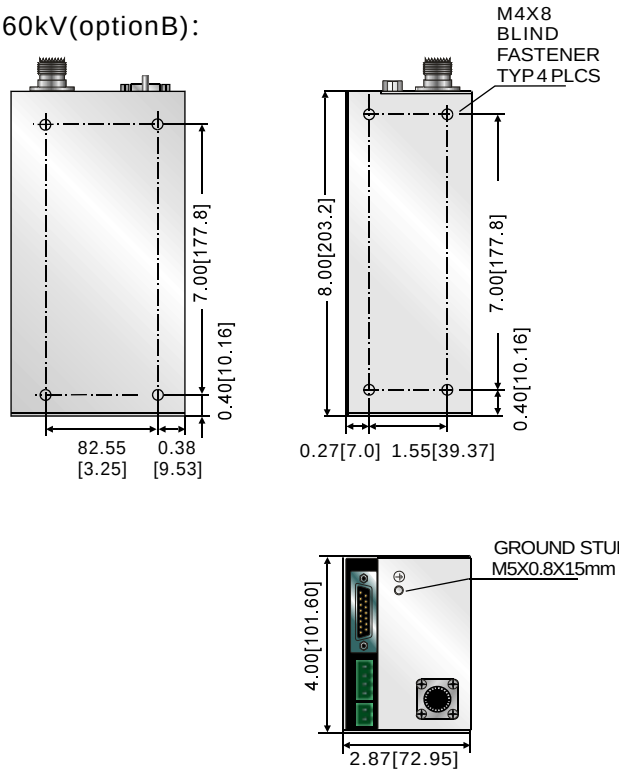


60kV~70kV (USB2.0/RS-232/RS-485)



GRID BIAS SPECIFICATIONS

6kV~60kV(optionB):



Grid Bias Option(GB):

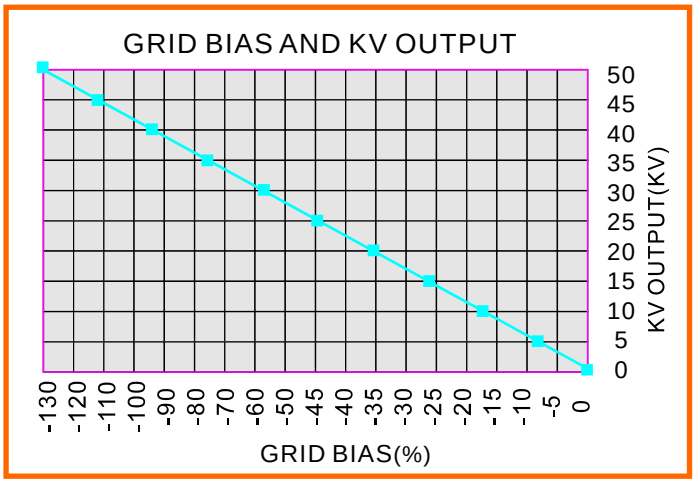
Plug-n-Play compatibility for Oxford's A pogee X-Ray Tube Wisman's Grid Bias Option for the XW Series is specifically designed for popular commercially available grid bias X-Ray tubes. The Grid Bias voltage is developed via the use of separate integrated high frequency switching circuit, providing maximum flexibility and control. The Grid Bias output is a voltage regulated, current compliant to pology ideally suited for wehnelt electrode applications. Arc and short circuit protection of the Grid Bias output prevents any damage due to transient events or installation errors.

Tracking Mode Operation:

Functioning in tracking mode the voltage monitor (0 ~+10Vdc = 0 ~ 50KV) of the main high voltage output is internally connected to the Grid Bias programming input (0~+10Vdc = 0 ~ -300Vdc of Grid Bias). Connected in this manner the Grid Bias output will track in a linearly pro-portional fashion the setting of the main KV output.

A front panel accessible multiturn potentiometer limits the maximum magnitude of Grid Bias output applied to the X-Ray tube, providing unparalleled flexibility.

The output of the Grid Bias option is provided via an auxiliary two position Phoenix Contact terminal block, the mating connecter is provided



Output Voltage: 0 to -300Vdc
Output Current: 0.25mA, maximum
Load Regulation: 1% of output voltage, no load to full load
Line Regulation: 1% for a ±10% change in input voltage
Ripple: 1% of maximum rated voltage

The XW Series is ideal for OEM applications requiring a competitively priced, precision X-ray tube high voltage module.

D X-RAY GENERATOR