XRN

10kV~70kV
10W~100W
X-RAY GENERATOR

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

ISO9001:2015

- OPTIONAL USB2.0、RS-232 OR RS-485 IS AVAILABLE
- 60kV at 2 mA. 100 WATT MAX.
- 70kV at 2 mA. 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 XRN Series of regulated X-ray power supplies offer output voltages to 70kV and incorporate a filament supply which provides regulated dc current adjustable between 0.3A and 3.5 A at 5.5V. High voltage and filament current can be linearly ramped up. The XRN 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.

XRN 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	XRN10P10	30	2.17	65	XRN30P65	60	0.17	10	XRN60P10	70	0.93	65	XRN70P65
	3.00	30	XRN10P30		2.50	75	XRN30P75		0.50	30	XRN60P30		1.07	75	XRN70P70
	5.00	50	XRN10P50		3.33	100	XRN30P100		0.83	50	XRN60P50		1.43	100	XRN70P100
	6.50	65	XRN10P65	40	0.25	10	XRN40P10		1.08	65	XRN60P65	50	2.00	50	XRN50P50-2
	7.50	75	XRN10P75		0.75	30	XRN40P30		1.25	75	XRN60P75		2.00	75	XRN50P75-2
	10.0	100	XRN10P100		1.25	50	XRN40P50		1.67	100	XRN60P100		4.00	75	XRN50P75-4
20	0.50	10	XRN20P10		1.63	65	XRN40P65	65	0.15	10	XRN65P10	60	2.00	60	XRN60P60-2
	1.50	30	XRN20P30		1.88	75	XRN40P75		0.46	30	XRN65P30		2.00	75	XRN60P75-2
	2.50	50	XRN20P50		2.50	100	XRN40P100		0.77	50	XRN65P50		2.00	100	XRN60P100-2
	3.25	65	XRN20P65	50	0.20	10	XRN50P10		1.00	65	XRN65P65	65	2.00	60	XRN65P65-2
	3.75	75	XRN20P75		0.60	30	XRN50P30		1.15	75	XRN65P75		2.00	75	XRN65P75-2
	5.00	100	XRN20P100		1.00	50	XRN50P50		1.54	100	XRN65P100		2.00	100	XRN65P100-2
30	0.33	10	XRN30P10		1.30	65	XRN50P65	70	0.14	10	XRN70P10	70	2.00	65	XRN70P65-2
	1.00	30	XRN30P30		1.50	75	XRN50P75		0.43	30	XRN70P30		2.00	75	XRN70P75-2
	1.67	50	XRN30P50		2.00	100	XRN50P100		0.71	50	XRN70P50		2.00	100	XRN70P100-2

XRN SELECTION EXAMPLE

XRN	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 cable (only 50W)		Option B : bias output 0.1: -100V (0.02~0.3 Option)

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SPECIFICATIONS

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PARAMETER	DESCRIBE
Input Voltage	+24Vdc±10% ,5.0A maximum for 70W, 8.0A maximum for 100W.
Output Voltage	6kV,10kV, 20kV, 30kV, 40kV, 50kV, 60kV, 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	Load: 0.01% of output voltage no load to full load.
Voltage Line Regulation	Line: ±0.01% for ±10% change in input voltage.
Current Load Regulation	Load: 0.01% of output current from 0 to rated voltage.
Current Line Regulation	Line: ±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℃ to +50℃.
Storage Temperature	-40℃ to +85℃.
Cooling	Free convection for the 50W unit and 75W unit, Fan (15CFM)assisted for 100W unit.
Humidity	20% to 85% RH, non-condensing.

Dimensions		Weight	
60kV	5.31" H x 2.95" W x8.07" D (135.0mm x 75.0mm x205mm)		3.0kg
60kV(Option USB/RS232/RS422)	6.06" H x 2.95" W x8.07" D (154.0mm x 75.0mm x205mm)		3.05kg
70kV	5.31" H x 2.95" W x9.01" D (135.0mm x 75.0mm x228mm)		3.5kg
70kV(Option USB/RS232/RS422)	6.06" H x 2.95" W x9.01" D (154.0mm x 75.0mm x228mm)		3.55kg

XRNPOWER INPUT/ FILAMENT OUTPUT CONNECTOR

SIGNAL			SIGNAL		
1	+24Vdc Input	+24 Vdc@ 8A, max	2	Ground	Power Ground
3	Filament output	+5.5Vdc@3.5A, max	4	Ground	Ground

ANALOG INTERFACE CONNECTION

J1	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	+10 Vdc 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 Setpoint	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)	Interlock Configuration+24Vdc
13	No Used(Interlock Coil)	Pin 12 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		

XRN 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

DIMENSIONS

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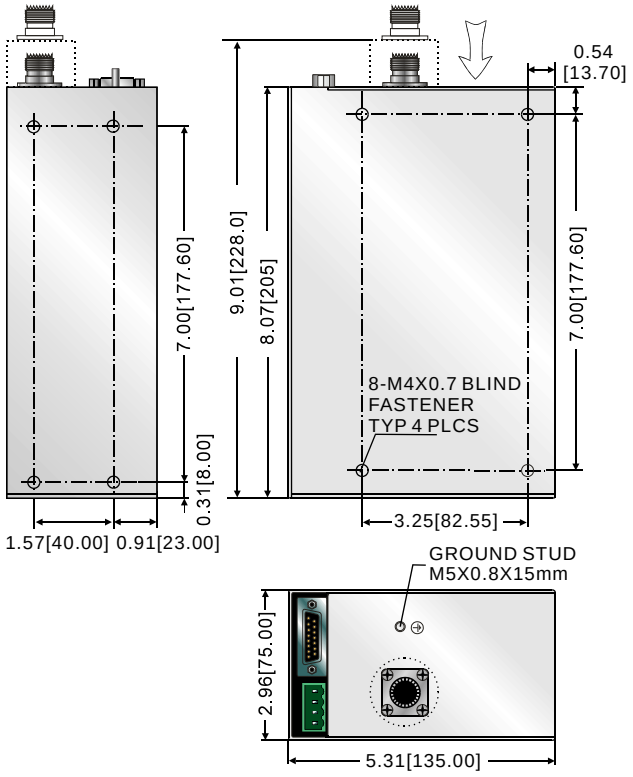
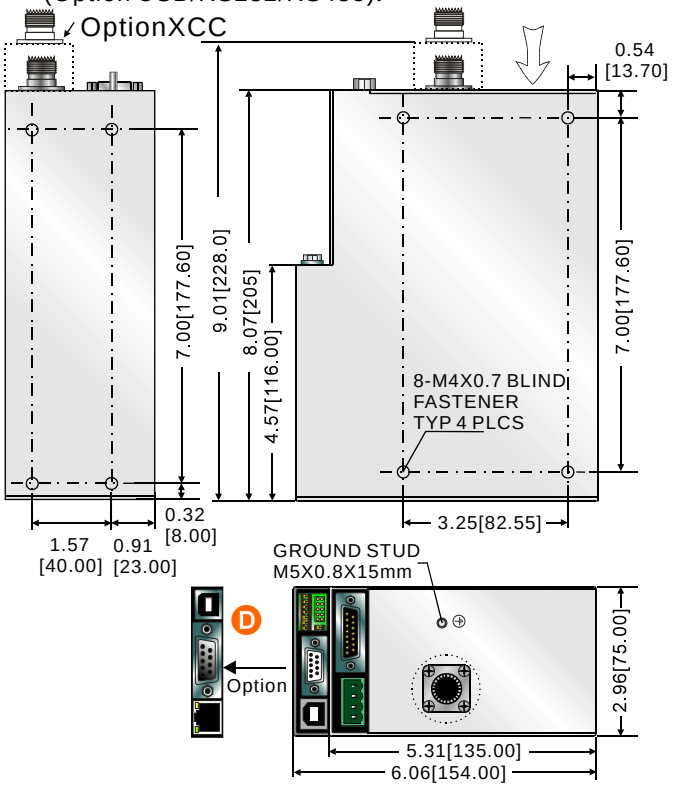
DIMENSIONS in.[mm]

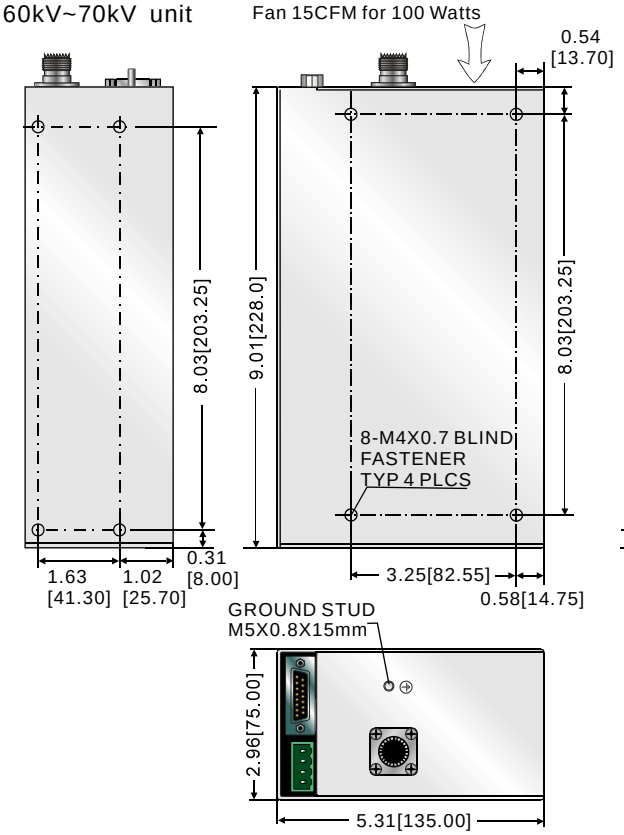
6kV~60kV unit:



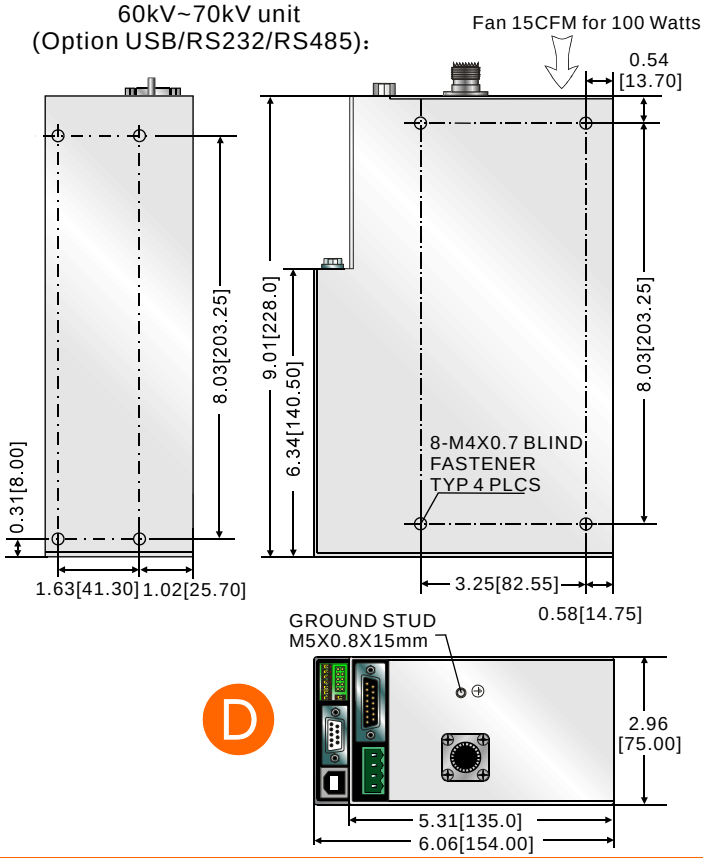
6kV~60kV unit
(Option USB/RS232/RS485):



60kV~70kV unit



60kV~70kV unit
(Option USB/RS232/RS485):



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