XRM 50W X-RAY POWER SUPPLY

SPELLMAN HIGH VOLTAGE ELECTRONICS CORPORATION

⚠ Not intended for new designs

- ***OUTPUT VOLTAGES FROM 25KV TO 65KV***
- ***ADJUSTABLE INTEGRATED FILAMENT SUPPLY***
- ***OVERVOLTAGE & SHORT CIRCUIT PROTECTION***
- ***VOLTAGE & CURRENT PROGRAMMING***
- ***LOCAL AND REMOTE EMISSION CONTROL***
- ***SAFETY INTERLOCK***
- ***OEM CUSTOMIZATION AVAILABLE***

www.spellmanhv.com/manuals/XRM

Spellman's XRM Series of regulated X-ray power supplies offer output voltages to 65kV and incorporate a filament supply which provides regulated dc current adjustable between 0.3A and 3.5A at 5.5V. High voltage and filament current can be linearly ramped up. The XRM incorporates local and remote programming, monitoring, safety interlock, short-circuit and overload protection.

TYPICAL APPLICATIONS

Powering grounded cathode X-ray tubes from Kevex, Oxford, RTW, Superior, Varian and Trufocus.

OPTIONS

AC	AC Filament
CPC	Constant Power
BIAS	Bias Supply
TP(x)	Alternate Test Point Scaling

SPECIFICATIONS

Input:
+24Vdc±10%, 4.25A maximum.

Output:
4 models with positive output polarity and adjustable voltages from zero to maximum voltage and current.

Voltage Control:
Local: Internal multi-turn potentiometer to set voltage from 0 to full output voltage.
Remote: 0 to +10Vdc proportional from 0 to full output voltage. Accuracy: ±1%. Z_{IN}: 10Mohm.

Emission Control:
Local: Internal potentiometer to set beam current between 0 and full output.
Remote: 0 to +10Vdc proportional from 0 to full output current. Accuracy : ±1%. Z_{IN}: 10Mohm.

DC Filament Supply:
Current: 3.5A, adjustable
Voltage: 5.5V

Voltage Regulation:
Load: 0.01% of output voltage no load to full load.
Line: ±0.01% for ±10% change in input voltage.

Current Regulation:
Load: 0.01% of output current from 0 to rated voltage.
Line: 0.01% of rated current over specified input range.

Ripple:
0.25% p-p of output voltage.

Temperature Range:
0°C to +50°C operational

Temperature Coefficient:
0.01% per °C, voltage or current regulated.

Stability:
0.05% per 8 hours after 1/2 hour warm-up.

Voltage and Current Monitors:
0 to +10Vdc proportional from 0 to rated output. Accuracy ±1%.

Dimensions:
6.3"H x 3.937"W x 10"D (16cm x 10cm x 25.4cm).

Connectors:
HV Output Connector: Delrin type connector, recessed. Cable assembly with mating connector 39.4in (1m).
I/O Connectors: 9 pin mini D-type Phoenix connector for power, filament and monitor connections.

Remote Programming:
(P/O 9 pin "D" analog control interface) Permits remote adjustment of the output voltage and current via an external potentiometer and the internal +10V reference. By adjusting the potentiometer from minimum to maximum, the desired output may be selected.

Remote Monitor:
Test points are made available at J4 for monitoring voltage and current outputs. The output polarity is positive from 0 to 10V equal to 0 to 100% of the output.

Regulatory Approvals:
Compliant to 2004/108/EC, the EMC Directive and 2006/95/EC, the Low Voltage Directive.
Compliant to 2002/95/EC, RoHS.

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Spellman High Voltage is an ISO 9001:2008 and ISO 14001:2004 registered company

XRM SELECTION TABLE

Maximum Rating		Model Number
kV	mA	
25	2.0	XRM25P50
30	1.67	XRM30P50
50	1.00	XRM50P50
65	0.77	XRM65P50

J2 POWER CONNECTOR—2 PIN PHOENIX

PIN	SIGNAL	PARAMETERS
1	+24 Vdc Input	+24Vdc @ 4.25 Amps Input
2	+24 Vdc Return	Power Return

J3 FILAMENT CONNECTOR—3 PIN PHOENIX

PIN	SIGNAL	PARAMETERS
1	Filament Output	0 to 3.5 Amps @ 5.5 volt compliance, Output
2	Filament Return	Filament Return
3	Spare	N/C

J4 MONITOR CONNECTOR—4 PIN

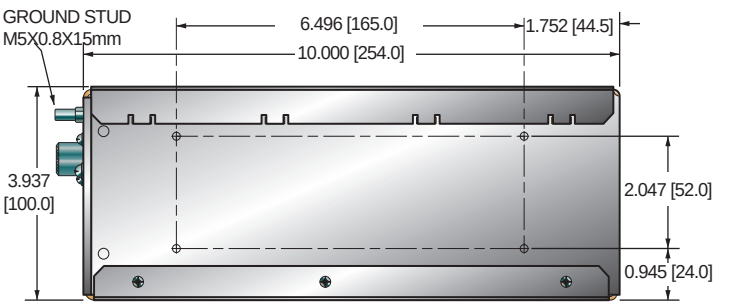
PIN	SIGNAL	PARAMETERS
1	Monitor Return	Signal Ground
2	kV Monitor	0 to 10Vdc = 0 to 100% of rated output, Zout =1kΩ
3	mA Monitor	0 to 10Vdc = 0 to 100% of rated output, Zout =1kΩ
4	Interlock Enable	Connect to ground through 12Vdc bulb (0.5 to 2W) to close interlock

J5 CONTROL INTERFACE—9 PIN MINI D CONNECTOR

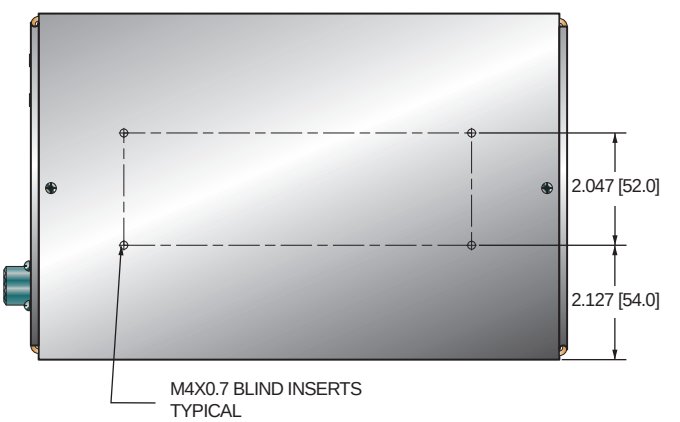
PIN	SIGNAL	PARAMETERS
1	+10Vdc Reference	+10Vdc @ 1mA
2	Spare	N/C
3	kV Program Input	0 to 10Vdc = 0 to 100% of rated output, Zin =10MΩ
4	Local kV Program	0 to 10Vdc = 0 to 100% of rated output, local 25kΩ multi-turn pot
5	Spare	N/C
6	mA Program Input	0 to 10Vdc = 0 to 100% of rated output, Zin =10MΩ
7	Local mA Program	0 to 10Vdc = 0 to 100% of rated output, local 25kΩ multi-turn pot
8	Spare	N/C
9	Ground	Signal Ground

DIMENSIONS: in.[mm]

SIDE VIEW



TOP VIEW



BACK VIEW