XMPG X-RAY GENERATOR

SPELLMAN HIGH VOLTAGE ELECTRONICS CORPORATION

- ***Output Voltage 4kV to 10kV***
- ***Integrated Ground Referenced Filament Supply***
- ***Low Ripple***
- ***Local and Remote Programming***
- ***OEM Customization Available***

The XMPG is a modular 10kV @ 10W X-Ray generator designed to drive a grounded filament X-Ray tube via closed loop filamentary control of the 0 to 1mA emission current. The grounded filament supply is rated at 0-5 amps @ 3Vdc. The filament supply features an internally adjustable 0.5 to 2.5 amp filament preheat and a internally adjustable 0 to 5 amp filament limit.

The high voltage program and emission current program have internal preset capability simplify interfacing to this X-Ray generator. Or a customer provided 0 to 10Vdc signal can be used to remotely control these two signals. A high voltage monitor signal and emission current monitor signal is provided. A High Voltage Enable input provides control of the high voltage output and a Filament Stable output indicates the filament current is stable and the X-Ray tube is producing X-Rays.

SPECIFICATIONS

Input Voltage:
+24 Vdc, ±10%

Input Current:
2 amp maximum

Output Voltage:
10kV, controllable over the range 4kV to 10kV

Voltage Accuracy:
<2%

Polarity:
Positive

Voltage Regulation:
Line: <0.01% for input voltage change of ±10%
Load: <0.01% for zero to full load

Voltage Stability:
< 0.1% per 24 hours at constant operating conditions, after 30 minutes warm up

Ripple:
< 500mV p-p of output voltage at full load

Ramp Rate:
< 20kV/second

Temperature Coefficient:
<250ppm per degree C

Current Regulation:
Line: ≤0.01% for 10% input voltage change under any load conditions
Load: ≤0.01% for full load to short circuit

Emission Current:
0-1mA

Current Accuracy:
<1% (above 10% of maximum output current)

Current Stability:
< 0.02%

Environmental:
Temperature Range:
Operating: 5˚C to 40˚C
Storage: -40˚C to 70˚C
Humidity:
Operating: 20% to 80% RH, non-condensing
Storage: 5% to 95%

Filament Supply:
Voltage: 0V to 3Vdc referenced to ground
Load Current: 5A max, preset adjustable limit
Stability: < 0.25% per 8 hours at constant operating conditions
Ripple: <50mV p-p (at maximum load current).
Temperature Coefficient: <300ppm/˚C

Filament Output:
A captive 500mm long unterminated 16 AWG twisted wire pair is provided.

High Voltage Output:
A captive 500mm long unterminated length of URM76 shielded cable

A red High Voltage On LED is provided next to the high voltage output to indicate that high voltage is being produced by the unit

Dimensions:
1.31"H x 4.13"W x 7.28"D (33.5mm x 105mm x 185mm)

Weight:
4.4 lbs. (2.0kg)

Regulatory Approvals:
Designed to meet IEC/UL 61010-1 Safety requirements for electrical equipment for measurement, control and laboratory use; CAN/CSA-C22.2 No.61010-1. CE marked to EN 61010-1. RoHS compliant.

As the unit is designed for incorporation within the users system it is not tested against any specific EMC standards. The user will need to take sensible EMC precautions when designing the unit in and verify the overall system EMC performance against any relevant standards.

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128122-001 REV. B
Spellman High Voltage is an ISO 9001 and ISO 14001 registered company

FILAMENT OUTPUT

COLOR	NAME
Red	Filament +
Black	Filament -

CUSTOMER INTERFACE— 15 PIN MALE D CONNECTOR

PIN	SIGNAL	SIGNAL PARAMETERS
1	+24Vdc	+24Vdc
2	Ground	Ground
3	Preheat (set value)	0-5Vdc from internal preset
4	Test (Filament Current Direct Program)	Do not connect
5	HV Enable	Digital Input
6	Filament Stable	Digital Output
7	HV Program Output	0-10Vdc from Internal Preset
8	HV Program Input	0-10Vdc = 0-10kV, Zin = 5MΩ, accuracy ±2% of full scale
9	High Voltage Monitor	0-10Vdc = 0-10kV, Zout = 10kΩ, accuracy ±2% of full scale
10	Emission Current Monitor	0-10Vdc = 0-1mA, Zout = 10kΩ, accuracy ±3% of full scale
11	Filament Current Monitor	0-10Vdc = 0-5A, Zout = 2.2kΩ, accuracy ±5% of full scale
12	Emission Current Program Input	0-10Vdc = 0-1mA, Zin = 1MΩ, accuracy ±3% of full scale
13	Emission Current Program Output	0-10Vdc from Internal Preset
14	Ground	Ground
15	Preset Max. Filament Current (set value)	0-10Vdc from Internal Preset

The filament Preheat level and current limit are set by internal preset potentiometers accessible through the side of the case.

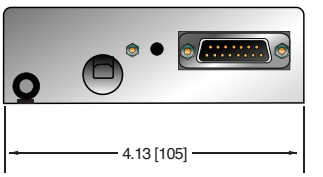
If external high voltage enable control is not required link pins 7 and 8.
If external emission current control is not required link pins 12 and 13.

How To Order:

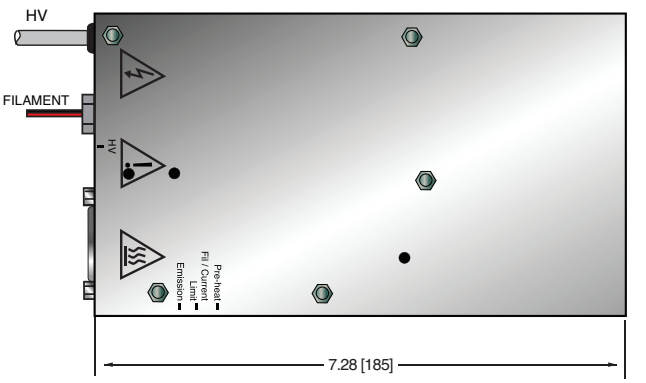
Model number: XMPG10P10/24

DIMENSIONS: in.[mm]

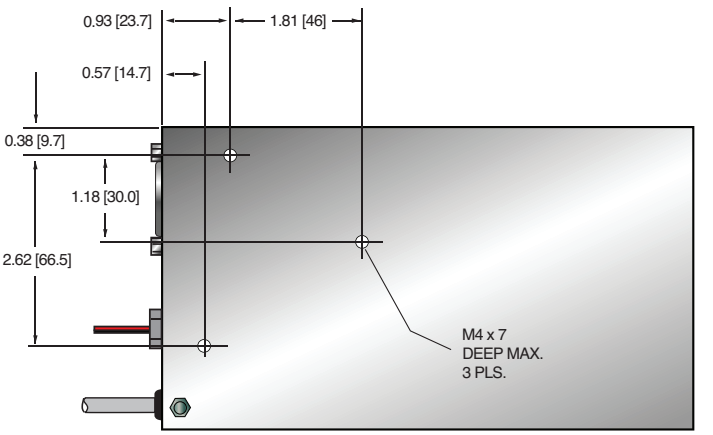
FRONT VIEW



TOP VIEW



BOTTOM VIEW



SIDE VIEW