



- **100kV @ 1200W**
- **Compact & Lightweight Modular Unit**
- **Universal Input, Power Factor Corrected**
- **Standard Digital Interfaces: USB, Ethernet and RS-232**
- **Programmable Power Trip Feature**
- **User Programmable Ramping and Arc Detect Feature**
- **CE Compliant**

www.spellmanhv.com/manuals/DXM100

Spellman's new DXM100 X-Ray generator module is designed for OEM applications up to 100kV at 1200 watts. Its universal input, small package size and choice of three standard digital interfaces simplifies integrating the DXM100 into your X-Ray analysis system. DSP based emission control circuitry provides excellent regulation of emission current, along with outstanding stability.

TYPICAL APPLICATIONS

NDT Analysis	Crystal Inspection
Plating Measurement	Diamond Inspection
Mineral Analysis	Food/Product Inspection

SPECIFICATIONS

Input Voltage:

Power factor corrected input, ≥ 0.98
180-264Vac, 47-63Hz, 8.25A maximum

Output Voltage:

100kV, maximum

Output Polarity:

Negative for floating filament X-Ray tubes

Output Current:

12mA maximum

Output Power:

1200 Watts maximum

Output Voltage Regulation:

$\leq 0.01\%$ of rated output voltage over specified input voltage range
 $\leq 0.01\%$ of rated output voltage for a full load change

Emission Current Regulation:

$\leq 0.01\%$ of rated output current over specified input voltage range
 $\leq 0.01\%$ of rated output current for a change from 30% to 100% of rated output voltage
Filament is disabled when kV is $< 30\%$ of full scale output

Ripple:

$\leq 1\%$ rms at > 20 kHz, 0.1% rms below 20 kHz

Stability:

≤ 25 ppm/hr after a 2 hour warm up

Temperature Coefficient:

≤ 50 ppm per degree C

Environmental:

Temperature Range:
Operating: 0°C to 40°C
Storage: -40°C to 85°C

Humidity:

20% to 85% RH, non-condensing.

Filament Configuration:

Closed loop emission control regulates filament setting to provide desired X-Ray tube emission current.

Output: 5.0 amps at a compliance of 10.0 volts, maximum.

The filament loop is disabled when the kV output is less than 30% of full scale output to protect the X-Ray tube. Standard filament Preheat adjustable 0-2.5 amps. Other filament levels available on special order.

Control Interface:

Local Interface:

Potentiometers are provided to adjust filament limit and preheat levels

Remote Interface: USB, Ethernet and RS-232 are standard.

All digital monitors have an accuracy specification of 2%

Control Software: A Windows graphical user interface example is provided.

High Voltage Enable: A hardware based, dry contact closure will enable the power supply into the high voltage on mode

Monitor Signals: Voltage and current monitor signals are scaled 0-10Vdc equals 0-100% of full scale, accuracy is 1%

Over Power Fault: The maximum power the unit can supply can be programmed (0-1200 watts) via the digital interface, this setting will be stored in memory. An over power fault will occur if the output power is $\geq 105\%$ of the set point value. When an over power fault occurs the high voltage output will be disabled and the Over Power Fault indicator will be activated on the GUI/Applet. Additionally both the UV and OV fault LED's on the DXM100 will be illuminated.

Cooling:

Forced air

Dimensions:

6.25" H X 12" W X 15.5" D (158.75mm x 304.79mm x 393.7mm)

Weight:

43 pounds (19.5kg)

Input Line Connector:

IEC320 with EMI filter, 6' (1.83 meter) cord set provided

Output Connector:

CA10 (R10). See table for pin out information

Regulatory Approvals:

Compliant to EEC EMC Directive. Compliant to EEC Low Voltage Directive. UL/CUL recognized, File E227588. RoHS Compliant.

DXM100 ANALOG INTERFACE— J2 15 PIN MALE D CONNECTOR

PIN	SIGNAL	SIGNAL PARAMETERS
1	Power Supply Fault	Open Collector, 35V @ 10mA Maximum
2	Current Program In	0 to 10V=0 to 100% Rated Output, $Z_{in}=10M\Omega$
3	Voltage Program In	0 to 10V=0 to 100% Rated Output, $Z_{in}=10M\Omega$
4	Filament Limit Input	0 to 10V=0 to 100% Rated Output, $Z_{in}=10M\Omega$
5	Local Filament Limit	Multi-turn front panel potentiometer
6	Filament Preheat Input	0 to 10V=0 to 100% Rated Output, $Z_{in}=10M\Omega$
7	Local Filament Preheat	Multi-turn front panel potentiometer
8	Voltage Monitor	0 to 10V=0 to 100% Rated Output, $Z_{out}=4.99k$, 1%
9	Signal Ground	Ground
10	Current Monitor	0 to 10V=0 to 100% Rated Output, $Z_{out}=4.99k$, 1%
11	X-ray Enable Input	Connect to Pin 12 to HV Enable Supply
12	X-ray Enable Output	+15V @ Open, $\leq 15mA$ @ Closed
13	Filament Monitor	1 Volt=1 Amp, $Z_{out}=10k\Omega$
14	X-ray On Output Signal	Open Collector, 35V @10mA Maximum
15	Spare	NC

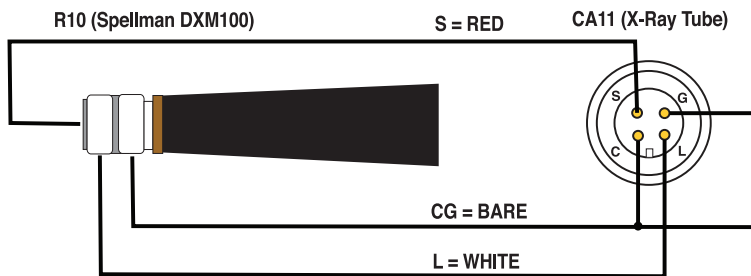
RS-232 DIGITAL INTERFACE— J3 9 PIN FEMALE D CONNECTOR

PIN	SIGNAL	SIGNAL PARAMETERS
1	NC	No Connection
2	TX out	Transmit Data
3	RX in	Receive Data
4	NC	No Connection
5	SGND	Ground
6	NC	No Connection
7	NC	No Connection
8	NC	No Connection
9	NC	No Connection

USB DIGITAL INTERFACE— J4 4 PIN USB “B” CONNECTOR

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

Typical DXM100 Cable Wiring



ETHERNET DIGITAL INTERFACE— J5 8 PIN RJ45 CONNECTOR

PIN	SIGNAL	SIGNAL PARAMETERS
1	TX+	Transmit Data +
2	TX-	Transmit Data -
3	RX+	Receive Data +
4	NC	No Connection
5	NC	No Connection
6	RX-	Receive Data -
7	NC	No Connection
8	NC	No Connection

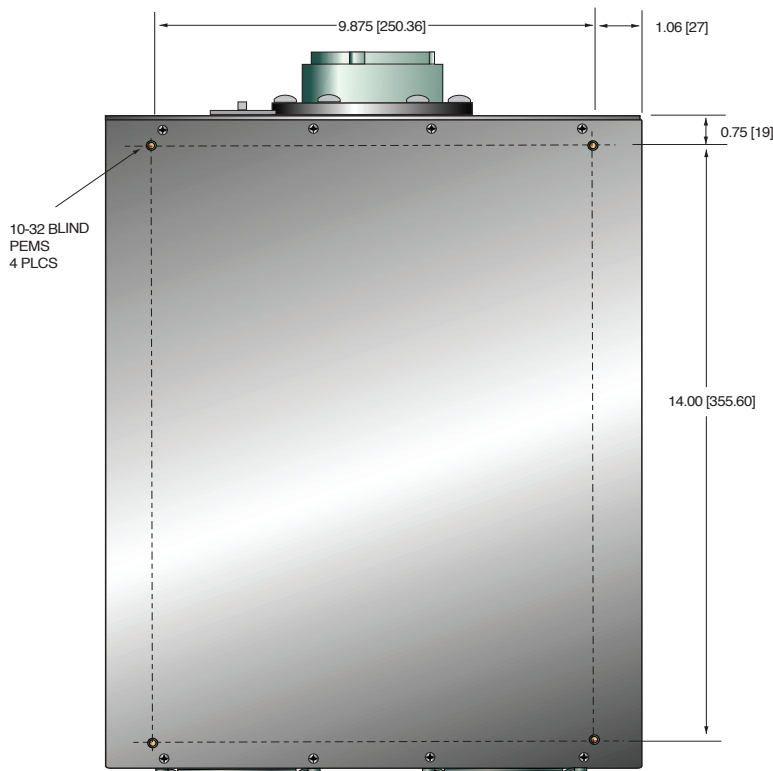
J6 CA10 (R10) HV CONNECTOR

PIN	OUTPUT CONNECTION
C (common)	High Voltage Output
S (small)	High Voltage Output
L (large)	Filament Output

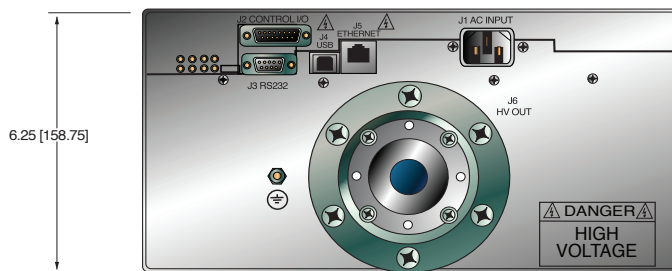
Note: No high voltage cable is provided

DIMENSIONS: in.[mm]

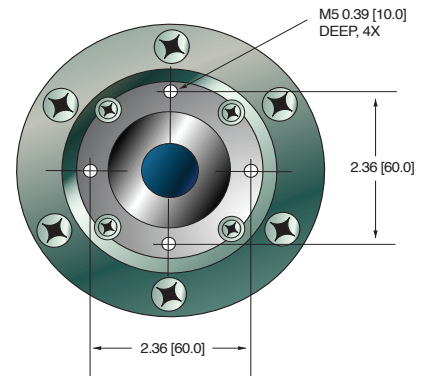
BOTTOM VIEW



FRONT VIEW



HIGH VOLTAGE MATING FLANGE BOLT CIRCLE DETAIL



SIDE VIEW

