



- 50kV at 2mA, 50 or 75 Watt Max
- 65kV at 2mA, 65 Watt Max
- Adjustable Integrated Filament Supply
- Arc & Short Circuit Protection
- Voltage & Current Programming
- Local and Remote Emission Control
- Safety Interlock
- OEM Customization Available
- CE Marked, UL Recognized

www.spellmanhv.com/manuals/MNX

The MNX Series is the result of Spellman's exceptional high voltage packaging and surface mount fabrication techniques coupled with proprietary encapsulation technology producing this ultra-compact X-Ray generator module. The MNX powers grounded cathode X-Ray tubes from a variety of well-known manufacturers, featuring a 0 to 50kV/65kV high voltage output @ 2mA limited to 50, 65 or 75 Watts. The MNX uses closed loop filament control circuitry providing highly regulated beam current. The ground referenced low noise dc filament supply operates between 0.3 and 3.5 amps. Offering tight regulation, high stability and low ripple, the MNX provides users local and remote analog control to set beam voltage, emission current and filament current limit.

TYPICAL APPLICATIONS

Powering grounded cathode X-ray tubes from Keveex, Oxford, RTW, Superior, Varex, Petrick and Trufocus.

OPTIONS

- XCC** XRM Compatible HV Cable (50kV only)
- 5VPM** 0 to 5 Volt Programming and Monitor Scaling
- 5302** Mammoflex HV cable for MNX
- 2001** Mammoflex HV cable for MNX w/XCC option

SPECIFICATIONS

Input Voltage:

- +24Vdc $\pm 10\%$, for 50W or 75W units
- +24Vdc $\pm 1V$, for 65kV @ 65W unit

Input Current:

- MNX50P50: 4.0 amps, maximum
- MNX50P75: 6.0 amps, maximum
- MNX65P65: 5.0 amps, maximum
- GB Option: 1.0 amp additional, maximum

Efficiency:

80-85%, typical

Output:

0 to 50kV at 0 to 2mA, limited to a maximum of 50 watts or 75 Watts. 0-65kV at 2mA limited to 65 Watts.

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: $\pm 1\%$. Z_{IN} : 10Mohm.

Emission Control:

- Local: Internal potentiometer to set beam current between 0 and full output current.
- Remote: 0 to +10Vdc proportional from 0 to full output current. Accuracy: $\pm 1\%$. Z_{IN} : 10Mohm. Filament limit and filament preheat control capability is also provided.

DC Filament Supply:

- Current: 3.5A, adjustable limit
- Voltage: 5.0 volt limit

Voltage Regulation:

- Load: 0.01% of output voltage no load to full load.
- Line: $\pm 0.01\%$ for $\pm 10\%$ change in input voltage.

Current Regulation:

- Load: 0.01% of output current from 0 to rated voltage.
- Line: $\pm 0.01\%$ for $\pm 10\%$ change in input voltage.

Ripple:

- 0.1% p-p of maximum rated output voltage, 50kV units (50/75W)
- 0.1% rms maximum rated output voltage, 65kV units (65W)

Environmental:

- Operational: 0°C to +50°C
- Storage: -40°C to +85°C
- Humidity: 0% to 90%, non-condensing

Temperature Coefficient:

- 0.01% per °C, voltage and current.

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 $\pm 1\%$.

Dimensions:

- 50kV Unit: 5.00"H x 2.87"W x 8"D (127.00mm x 72.90mm x 203.25mm)
- 65kV Unit: 5.00"H x 2.87"W x 9"D (127.00mm x 72.90mm x 228.65mm)
- XCC Option: 5.00"H x 2.87"W x 9"D (50/75W units only) (127.00mm x 72.90mm x 228.65mm)

Weight:

- 6.5 lbs. (2.9kg)

Regulatory Approvals:

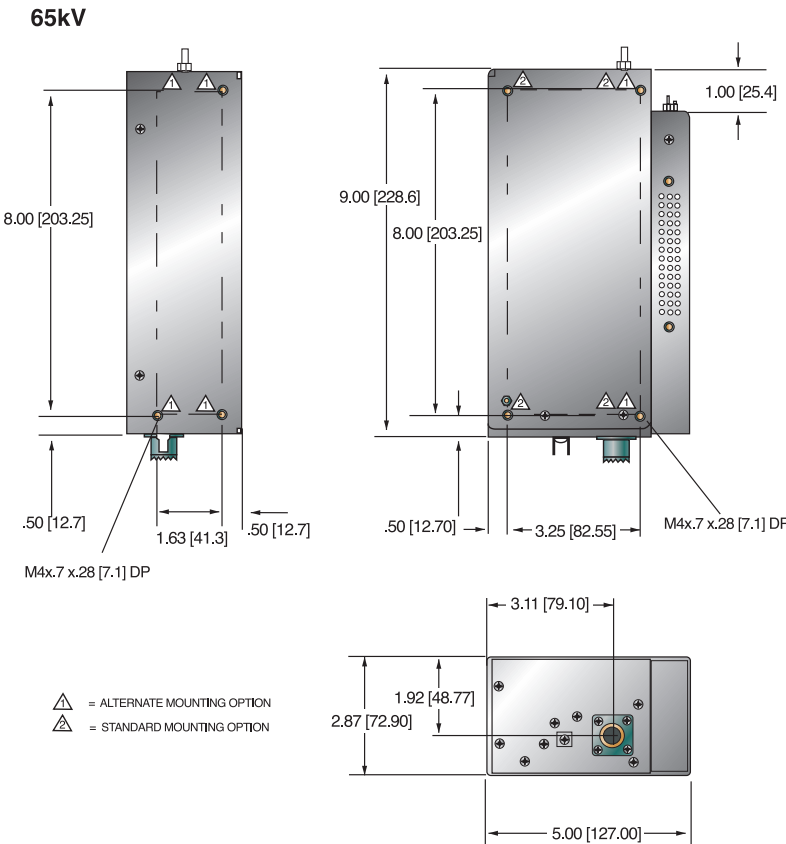
- Compliant to EEC EMC Directive. Compliant to EEC Low Voltage Directive. UL/CUL recognized, File E227588; MNX65P65 is not UL/CUL recognized. RoHS Compliant.

X-Ray Tubes

The MNX powers grounded cathode X-Ray tubes from manufacturers such as Varex, Petrick GmbH and others.



DIMENSIONS: in.[mm]



J2 POWER INPUT CONNECTOR

PIN	SIGNAL	PARAMETER
1	+24V Input	+24 volts @ 5A, max.
2	24V Return (Gnd.)	Power Ground

J3 FILAMENT CONNECTOR

PIN	SIGNAL	PARAMETER
1	Filament Out	0.3A to 3.5A, 5 volt, max.
2	Filament Return	Filament Ground

J4 ANALOG INTERFACE CONNECTOR MALE 15 PIN MINI "D"

PIN	SIGNAL	PARAMETER
1	Monitor Return	Signal Ground
2	Voltage Monitor	0-10 volts = 0 to full scale, Zout=1KΩ
3	Current Monitor	0-10 volts = 0 to full scale, Zout=1KΩ
4	Interlock Output	Connect 12V HVON bulb to pin 15 to enable
5	+10 Volt Reference	+10 Volts at 1mA, maximum
6	Filament Monitor	1 volt = 1 amp, Zout=1KΩ
7	Voltage Program Input	0-10 volts = 0 to full scale, Zin=10MΩ
8	Local Voltage Program*	0-10 volts, screwdriver adjust
9	Filament Limit Setpoint*	1 volt = 1 amp, screwdriver adjust
10	Current Program Input	0-10 volts = 0 to full scale, Zin=10MΩ
11	Local Current Program*	10 turn pot, screwdriver adjust
12	Not used (+24V Out for Interlock)	(Optional Interlock configuration)
13	Not used (Interlock Coil)	(Optional Interlock configuration)
14	Filament Preheat Setpoint*	1 volt = 1 amp, screwdriver adjust
15	Interlock Return	Interlock Ground

*Denotes 10 turn potentiometer located on front panel

J1 HIGH VOLTAGE OUTPUT CONNECTOR

Spellman drywell type detachable connector.

Standard: A one meter (39.4") long polyethylene mating high voltage cable is provided.

5302: A one meter (39.4") long Mammoflex mating high voltage cable is provided, SHV p/n 201946-007

2001: A one meter (39.4") long Mammoflex mating high voltage cable is provided, compatible with the XCC Option SHV p/n 201946-002

Drywell connector depth:

50kV: 7.25"

65kV: 8.25"

XCC Option: 8.25"

How To Order:

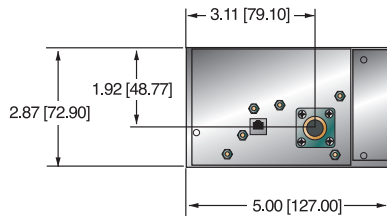
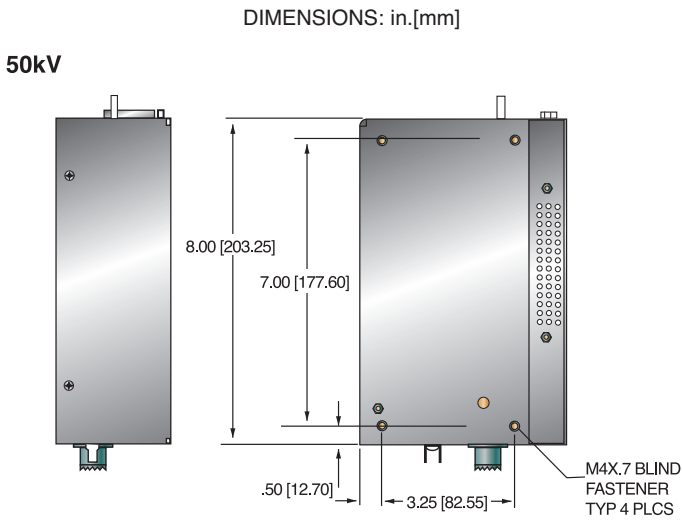
Sample model number:

50 Watt unit: MNX50P50

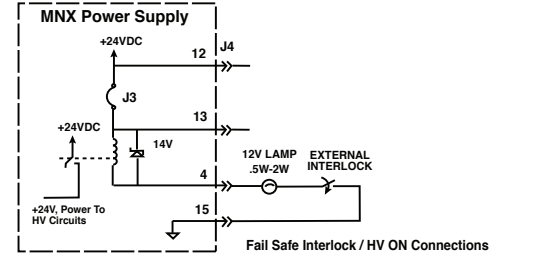
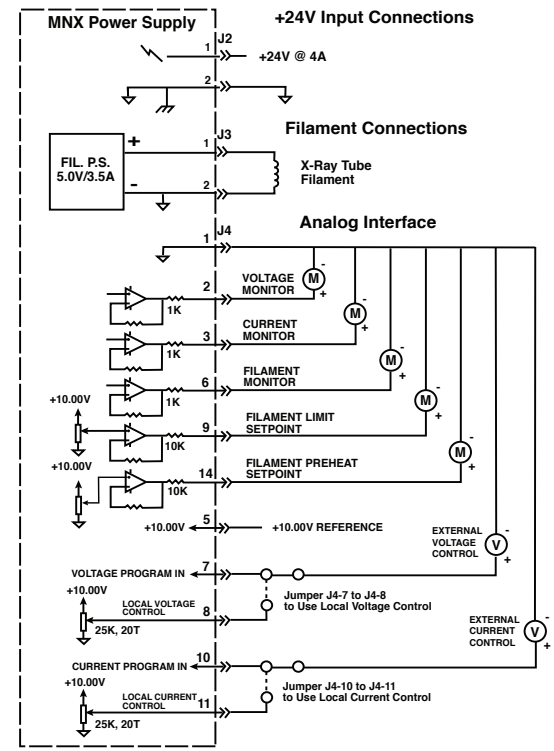
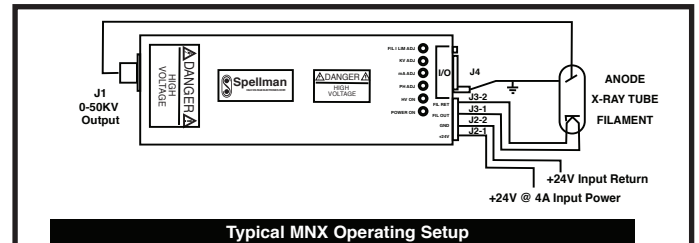
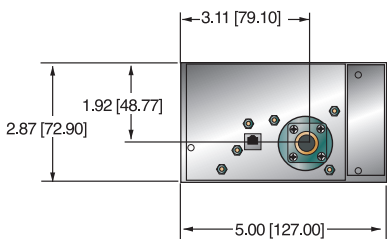
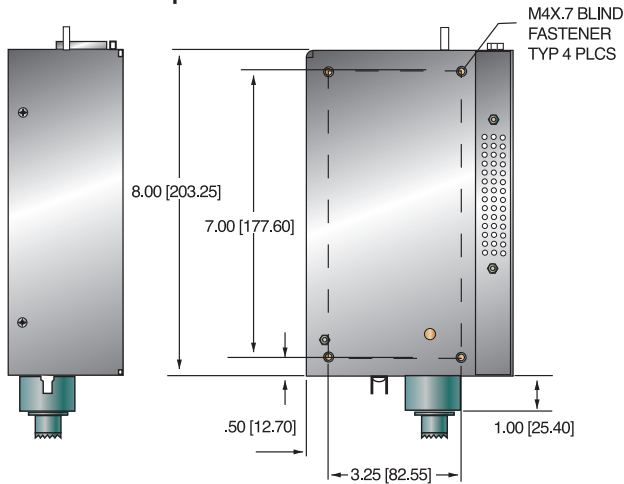
65 Watt unit: MNX65P65

75 Watt unit: MNX50P75

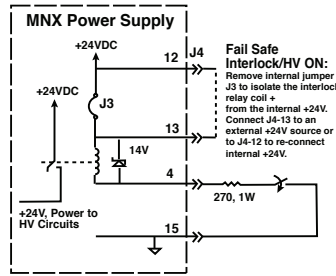
Options are added to the model number as follows:
MNX50P50/XCC



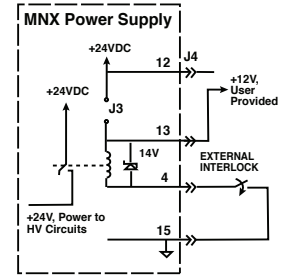
50kV with XCC Option



Alternate Interlock Configurations



Alternate Interlock Configuration:
Fail Safe Lamp Replaced With a
270 Ohm Resistor



Alternate Interlock Configuration:
Customer Provided +12V For HV ON
Relay, Relay Return Grounded



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