



- **FLOATING, PROGRAMMABLE 3KV OUTPUT**
- **OUTPUT ISOLATED TO 16KV**
- **WELL REGULATED, LOW RIPPLE**
- **OUTPUT VOLTAGE MONITOR**
- **COMPACT SHIELDED METAL ENCLOSURE**
- **ARC AND SHORT CIRCUIT PROTECTED**

Spellman's MCP Module is a well-regulated, high performance DC-DC converter featuring a floating 3kV output, isolated to 16kV. The MCP low output ripple specification makes it ideal for use with detectors in Mass Spectrometry applications like: Electron Multipliers (EM's), Microchannel Plates Detectors (MCP's) and Channel Electron Multipliers.

This +3kV @ 330uA module is packaged in a shielded metal enclosure. The unit has remote voltage programming and a voltage monitor, and features low injected ripple when used with biasing supplies. The MCP module is easily customized to meet OEM requirements with improved ripple performance, improved stability and configurable output lead terminations as required.

## TYPICAL APPLICATIONS

### Mass Spectrometry Detectors

- Microchannel Plates
- Electron Multipliers
- Channel Electron Multipliers

## SPECIFICATIONS

### Input Voltage:

+24Vdc,  $\pm 0.5$  volts

### Input Current:

600 mA maximum

### Output Voltage:

+100V to +3kV, continuously variable over the entire output range

### Output Current:

330uA maximum

### Polarity:

Positive

### Isolation Voltage:

Up to 16kV total to ground  
(resistance to ground 600M on each output)

### Line Regulation:

$\leq 0.01\%$  for input voltage change of 1V

### Load Regulation:

$\leq 0.1\%$  for a no load to full load change

### Voltage Programming:

0 to 10 volt corresponds to 0 to 100% of rated output voltage

### Voltage Monitor:

0 to 5 volts corresponds to 0 to 100% of rated output voltage

### Accuracy:

$\pm 1\%$  from 10% to 100% of output.  
Below 10% accuracy spec is not guaranteed

### Ripple:

$\leq 0.1\%$  Volts p-p, 0.1Hz to 1MHz

### Stability:

$\leq 1000$  ppm/hour at constant operating conditions  
after a 1 hour warm up.

### Temperature Coefficient:

$\leq 300$ ppm per degree C

### Environmental:

Temperature Range:  
Operating: 0°C to 40°C  
Storage: -40°C to 85°C  
Humidity:  
10% to 90%, non-condensing.

### Cooling:

Convection cooled

### Dimensions:

1.49" H X 4.09" W X 6.73" D (38mm X 104mm X 171mm)

### Weight:

2.2 pounds (1kg)

### Interface/Power Connector:

9 pin male D connector

### HV Output Connector:

HV positive: 29.5" (750mm) flying lead, coaxial HV cable  
HV negative: 29.5" (750mm) flying lead, coaxial HV cable

### Regulatory Approvals:

Compliant to 2004/108/EC, The EMC Directive and  
2006/95/EC, The Low Voltage Directive.

## MCP INTERFACE/POWER CONNECTOR

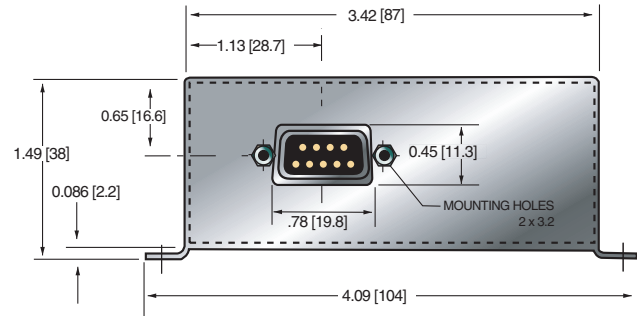
JB1	SIGNAL	SIGNAL PARAMETERS
1	Signal Ground	Signal Ground
2	Voltage Programming Input	0-10Vdc = 0-100% of Rated Output
3	+24V Input	+24V Input
4	+24V Input	+24V Input
5	Voltage Monitor	0-5Vdc=0-100% of Rated Output
6	Power Ground	Power Ground
7	Power Ground	Power Ground
8	Power Ground	Power Ground
9	Power Ground	Power Ground

DIMENSIONS: in.[mm]

FRONT VIEW



BACK VIEW



TOP VIEW

