

Fast Polarity Reversing ESI/APCI High Voltage Module $\pm 8\text{kV}$ $100\mu\text{A}$ 20 ms

- Mass spectrometer source and dynode supplies, electrostatic applications
- Programmable voltage and current control
- Fast on-line polarity switching
- High stability, low ripple
- Short circuit and flashover proof
- Factory burn in
- Low radiated magnetic field



Highlights

The MS008RCD020 high - voltage power supply is designed for demanding mass spectrometry applications, with particular suitability for electrospray ionisation (ESI) and atmospheric pressure chemical ionisation (APCI) ion sources, where fast, repeatable polarity changes and precise control are essential to analytical performance. The unit provides a $\pm 8\text{ kV}$ fast polarity - switching output with a maximum switching time of 20ms, ensuring rapid mode changes while maintaining excellent voltage and current stability. Independent voltage and current control, combined with an output current capability of up to $100\mu\text{A}$ makes the MS008RCD020 well suited to modern ion - source architectures.

IMI are experts in mass spectrometry and have a deep understanding of how power supply design directly influences overall instrument performance. This application - driven expertise is embedded in the MS008RCD020 and across IMI's wider high - voltage portfolio . IMI manufactures a comprehensive range of high - voltage power supplies suitable for all types of mass spectrometer, covering ion source, dynode, quadrupole driver, flight tube and detector power supply applications. Other products in the range offer polarity- switching speeds down to 5 ms, enabling OEMs to select the optimal high - voltage solution for each subsystem within the instrument.

Specifications: MS008RCD020

Unit	Output Voltage	Output Current	Ripple at Full Load	Temp - Co (/°C)	Size (mm) L x W x H	Weight (kg)
MS008RCD020	0 to $\pm 8\text{kV}$	0 to $100\mu\text{A}$ max	<0.1%pp	<100 ppm	240 x 82 x 37.6	1.1

Electrical Specification

Input	+24Vdc $\pm 10\%$ <500mA (<1.2A during polarity switching)
Voltage control	0 to +8V for 0 to $\pm 8kV \pm 1\%$, ($Z_{in} = 10k\Omega$) 0 to +10V for 0 to $\pm 100\mu A \pm 1\%$ ($Z_{in} = 10k\Omega$)
Polarity control	TTL input, low=negative, high=positive output
Voltage monitor	0 to +8V $\pm 1\%$ for 0 to $\pm 8kV$ ($Z_{out} = 10k\Omega$)
Current monitor	0 to +10V $\pm 2\%$ for 0 to $\pm 100\mu A$ ($Z_{out} = 10k\Omega$)
Line regulation	< $\pm 0.1\%$ for $\pm 10\%$ change in supply voltage
Load regulation	<0.1% zero to full load
Drift (after 1 hour warm-up)	<500ppm/hour after 1 hour stabilisation
Protection	Protected against intermittent arcing and continued short circuit to ground

Mechanical Specification

Mounting	8-32 UNC inserts on 205.8 x 57.2mm centres
Input and control connector	14 Way Molex Mini-Fit Jr Receptacle 39012140 on 508mm flying lead

Environmental Specification

Temperature, operating	+5°C to +45°C	Humidity (RH)	10-85% non-condensing
Temperature, storage	-35°C to +85°C		

The unit is to be supplied from a current limited supply providing 24V dc, impulse limited to overvoltage Category I (of IEC60364-4-443). For use in an environment of pollution degree 2.

Regula-

UL/CUL listed part E254121. Compliant with UL 61010-1 and related international standards Compliant to RoHS directive 2011/65/EU as amended by 2015/863

Pin Assignments

1	24Vdc input	8	Polarity control input TTL
2	Supply 0V (+24V return)	9	Signal ground
3	Enable input TTL	10	Current/voltage mode indicator TTL
4	Voltage monitor output 0-8V	11	Not connected
5	Voltage control input 0-8V	12	Not connected
6	Current monitor output 0-10V	13	Not connected
7	Current control input 0-10V	14	Not connected

Notes:

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Part Number Selection

Series Code: MS

O/P kV	Polarity	Options	Switching Speed
008=8kV	R = reversible	CD = Voltage and current control	020 = 20ms

Standard part number: MS008RCD020

Dimen-
MS-

