



The MSC2.5PN7.5 is a bipolar reversible power supply specifically designed for electrostatic chuck clamping applications. Two 0 to 2500 volt @ 7.5 watt reversible outputs that are of opposite polarity are provided on the two high voltage output connectors. Front panel controls via programming buttons and an OLED display allow local operation and control of the unit. The RS-232/RS-485 /Ethernet digital interface allows for simple OEM integration into complex system designs.

### SPECIFICATIONS

#### Input :

+24Vdc  $\pm 5\%$  @ <2 amps. Switch controlled on front panel and fuse protected.

#### High Voltage Output 1 and Output 2

##### Voltage:

0 to  $\pm 2500$  volts. Output 1 and 2 amplitudes are independently programmable

##### Current:

0 to 3mA

##### Current Limit:

Output current limits can be independently set in the range of 0.1mA to 3.0mA in 0.1mA steps.

##### Power:

7.5 watts, maximum

##### Polarity:

Bipolar, High Voltage Output 1 polarity always opposite of High Voltage Output 2

##### Voltage Control:

Resolution = 1V  
Accuracy =  $\pm 1\%$  of programmed value

##### Regulation:

Line: <0.1% for 10% input voltage change under any load conditions  
Load: <1.3% for zero to full load

##### Stability:

<0.1%/hour, <0.2%/8 hours at constant operating conditions after 1 hour warm up

##### Temperature Coefficient:

<50ppm per degree C

##### Ripple:

<0.1% p-p at full load, maximum output

##### Rise and Fall Times:

Rise time (0V to  $\pm 2500$  V) and fall time ( $\pm 2500$ V to 0V) are separately programmable in the range of 300ms to 9.9s (to within 1% of final voltage value)

- **Specifically Designed for E-Chuck Applications**
- **Two Reversible Outputs of Opposite Polarity**
- **Rated 2.5kV 3mA. Amplitudes are Set Independently**
- **Automatic User Configurable De-chucking Function**
- **300ms Slew Time Driving 20nF of Load Capacitance**
- **Front Panel Control via Buttons and LCD Display**
- **RS-232, RS-485 and Ethernet Interface**
- **Free GUI for Testing and Development Work**

#### Voltage Monitor:

Resolution = 1V  
Accuracy =  $\pm 1\%$  of actual output ( $\pm 8$  volt offset)

#### Current Monitor:

Resolution = 1.25  $\mu$ A  
Accuracy =  $\pm 2\%$  of actual output  $\pm 100\mu$ A offset

#### Typical Load Capacitance:

<20nF (for other load capacitance, contact Spellman)

#### Protection:

Arc and short circuit protected. Equipped with input and output current limits. Output current limit settable from 0.1mA to 3mA. Not designed to withstand continuous arcing.

#### Auto-Toggle/De-Chucking Function:

This unit has both a manual and a customer configurable automatic toggle function (degauss/de-chuck).

#### Communication:

The unit can be operated locally from the front panel. It can also be controlled through the RS-232/RS-485 serial interface, or Ethernet. The serial interface can be configured via the front panel to either RS-232 or RS-485. The unit is shipped from the factory set to RS-232. 9600 baud, no parity, no handshake or flow control. Note: When Ethernet is connected to the LAN port, Serial comms is disabled

#### Front Panel Indicators:

The unit has a 20 character by 2 line back lit OLED display and a high voltage status LED. Configuration and setting of various parameters can be accomplished via push button switches. The OLED will power down after five minutes and is reactivated by pressing any button. The red LED indicator illuminates when high voltage is being produced. When the unit is shutdown due to a fault the LED will flash at a 1 Hertz rate until the fault is cleared.

#### Front Panel Controls:

The unit has front panel buttons for local control.

##### Local

Front panel control and monitoring via the OLED display

##### Toggle

Manual change of output polarity

##### Output On/Off

Soft turns the high voltage output on and off

##### Mode

Changes the mode of operation and navigation menu

##### Rotary Control/Enter

For navigating and entering value changes

**Environmental:**

Temperature Range:  
 Operating: 0°C to 45°C  
 Storage: -35°C to 85°C  
 Humidity:  
 0 to 85% RH, non-condensing

**Cooling:**

Convection cooled

**Input Power Connector:**

2 pin Molex VersaBlade connector. A mating input cable is available (see How To Order table)

**Serial Communications Connector:**

9 pin female D connector

**High Voltage Output Connectors:**

Radiall BNC-HT/MHV connector. Mating HV output cables are available (see How To Order table)

**Installation Brackets:**

A kit including 2 brackets and installation screws (M4x10) allows the unit to be mounted on a half width rack (see How To Order table)

**Dimensions:**

12.45" L x 8.03" W x 3.46" D (316mm x 204mm x 88mm)

**Weight:**

3.09lbs. (1.4kg)

**Regulatory Approvals:**

Compliant to EEC Low Voltage Directive.  
 UK Conformity Assessed. RoHS Compliant.

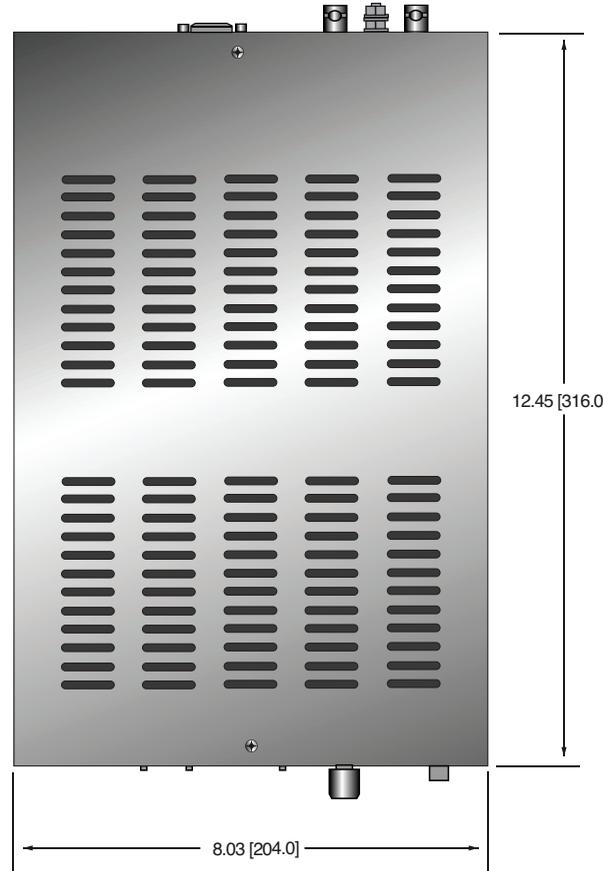
DIMENSIONS: in.[mm]

**REAR VIEW**



M5 GROUND STUD

**TOP VIEW**



**FRONT VIEW**



**INPUT POWER — MOLEX VERSABLADE 2 PIN CONNECTOR**

PIN	SIGNAL	PARAMETER
1	+24Vdc	+24Vdc @ 2A
2	+24Vdc Return (Gnd.)	Power Ground

**SERIAL COMMUNICATIONS— 9 PIN FEMALE D CONNECTOR**

PIN	SIGNAL	I/O	SIGNAL PARAMETERS
1	NC	-	Connection
2	Z/TXD	I/O	TXD RS-232/RS-485 Inverting
3	Y/RXD	I/O	RXD RS-232/RS-485 Non Inverting
4	NC	-	No Connection
5	GND	-	Ground
6	NC	-	No Connection
7	NC	-	No Connection
8	NC	-	No Connection
9	NC	-	No Connection

**HOW TO ORDER**

Description	Part Number
MSC Power Supply	MSC2.5PN7.5
Power input cable, 3m	HVC05/2NSO/1229
HV Output cable, 3m	HVC5/1ISO/1228
Set of brackets for rack mount	MSCK100