

5W Miniature High Voltage Modules 2.5kV to 10kV

- Mass spectrometers, nuclear instrumentation, ion pumps, CRTs, image intensifiers.
- 2.5kV, 5kV and 10kV versions
- Positive and negative polarity options
- Remote voltage programming or potentiometer setting
- Voltage monitor & current monitor included
- Encapsulated in screened metal case for reduced EMI
- Flashover & short circuit protected
- UL listed



This range of high performance 5W high voltage power supplies has been specifically designed for applications where space is at a premium. These compact DC to DC converter modules operate from a dc supply of either 12V or 24V (nominal) and provide an accurately controlled high voltage output. The use of high stability components within the feedback system ensures a low temperature coefficient and good long & short term drift making the 3590 series ideal for use in many low power and portable applications. The output voltage may be controlled from 50V to maximum (2.5, 5 or 10kV) by means of an external control voltage of 0 to +5V (or +10V to special order). Monitoring of output voltage and current are also provided as are fixed and variable references.

Electrical Specification: 3590 Series

Unit Type (180° Connector)	Input Voltage	Output Voltage	Output Current	Polarity
3590-1420	24V	+2.5kV	2mA	Positive
3590-1D20	24V	+2.5kV	2mA	Positive
3590-1120	24V	+5kV	1mA	Positive
3590-1A20	24V	+5kV	1mA	Positive
3950-1320	24V	+10kV	0.5mA	Positive
3590-1C20	24V	+10kV	0.5mA	Positive
3590-2xxx	As above for Negative equivalents			Negative
3590-xxx1	Options available with 12V supply and/or 10V control for volume orders			

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Electrical Specification

Input (12V type)	+10.8V to +15.6V dc. No load current: 120mA at 12V i/p. Full load current: 730mA at 12V i/p
Input (24V type)	+21.6V to +30V dc. No load current: 80mA at 24V i/p. Full load current: 360mA at 24V i/p
Output ripple	500mVp-p (typical)
Line regulation	<75ppm for a 1V change in input voltage
Load regulation	2.5kV models: <1500ppm for zero to full load. Other models: <500ppm for zero to full load
Drift (after 1 hour warm up)	<150ppm over 8 hour period, <100ppm over 1 hour
Protection	Current limited to 130%. Protected against intermittent flashover to ground
Control of Output	0 to 5V for 0 to 100% rated output voltage, $Z_{in} = 1M\Omega$ 0 to 10V option $Z_{in} = 20k\Omega$
Reference output (fixed)	+5V $\pm 2\%$, maximum current 1.5mA, temp-co 50ppm/ $^{\circ}C$
Reference output (variable)	Zero to +5V, multiturn potentiometer
Voltage monitor	Zero to +5V for zero to 100% rated output voltage, $\pm 1\%$ ($Z_{out} = 10k\Omega$)
Current monitor	Zero to +5V for zero to 100% rated output current, $\pm 5\%$ ($Z_{out} = 10k\Omega$)

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3590 Series

Electrical Specification

Dimensions	95.2 x 49.8 x 20 mm (3.75" x 1.96" x .79")
Weight	150g (5.3 oz.) approximately
Mountings centres	2 holes 4.2mm diameter on 88.8 (3.5") centres
Input / control	0.1" pitch connectors (Molex : crimp 08-50-0032; 4 way housing type: 22-01-2045; 5 way housing type: 22-01-2055)
Output	Flying lead, red UL3239 un-screened 20kV cable 0.5m long. HV Return: M3 stud or fixings

Environmental Specification

Temperature, operating	0°C to +50°C. De-rate above 35°C linearly to 80% power at 50°C	Humidity (RH) <31°C non-condensing	80% maximum non-condensing
Temperature, storage	0°C to +80°C	Humidity (RH) >30°C non-condensing	Decrease linearly to 50% at 40°C
Altitude, operating	Up to 2,000m	Altitude, storage	Up to 18,000m

Pin Assignments

1	+24V or +12V dc input
2	0V Power return
3	Signal ground
4	Fixed reference output (+5V)
5	Control i/p (0 ... +5V)
6	Variable reference output (0 ... +5V)
7	Voltage monitor o/p
8	Current monitor o/p
9	Not connected

Dimensions

Dimensions in mm
Projection/first angle

