

Excellence in High Voltage SC Source Series Data Sheet

SC005 & SC008 – constant current / constant voltage types

FAST POLARITY SWITCHING HIGH VOLTAGE MODULES

Application:

Mass spectrometer Electro Spray Ionization &
Atmospheric Pressure Chemical Ionization source

- Constant voltage ESI: $\pm 5\text{kV}$ or $\pm 8\text{kV}$ types @ $500\mu\text{A}$ / $300\mu\text{A}$ & $2\mu\text{A}$ for nano spray applications
- Tru-Current™ APCI: $<2\mu\text{A}$ to $\pm 50\mu\text{A}$ with adjustable compliance voltage
- Fast polarity switching within 10mS or 50mS types
- True zero volt crossing
- Short circuit and flashover proof, Fully screened metal case for good EMI immunity

Nano Spray option now available



This range of high performance mass spectrometer source supplies has been specifically designed to meet the needs of today's high throughput mass spectrometers. Featuring Tru-Current™ technology with control at the APCI source, and fast polarity changeover in less than 10mS, these supplies are ideal for multimode source applications where changeover and settling time are critical.

Electrical Specification

Unit Type	Mode(s)	Output voltage & current range	Changeover time
SC005RCV010	Constant voltage	0 to $\pm 5\text{kV}$ at $\pm 500\mu\text{A}$	<10mS
SC008RCV010	Constant voltage	0 to $\pm 8\text{kV}$ at $\pm 300\mu\text{A}$	<10mS
SC008RCV010-1x	Constant voltage	0 to $\pm 8\text{kV}$ at $\pm 2\mu\text{A}$ (Nano amp current monitor*)	<10mS
SC008RCC010	Constant current	0 to $\pm 50\mu\text{A}$ at $\pm 8\text{kV}$ compliance (variable)	<10mS
Available soon	Constant current & voltage	0 to $\pm 50\mu\text{A}$ / $\pm 500\mu\text{A}$ at 0 to $\pm 5\text{kV}$	<10mS
Available soon	Constant current & voltage	0 to $\pm 50\mu\text{A}$ / $\pm 300\mu\text{A}$ at 0 to $\pm 8\text{kV}$	<10mS
SC00xRCx050	-	As above for 50mS equivalent	<50mS

Input:	$+24$ volt dc $\pm 10\%$ $<1\text{A}$. 0V input common to HV return and chassis.
Output, voltage / current	See table above.
Ripple:	$<0.1\%$ p/p
Line regulation:	$<300\text{ppm}$ of rated output for $\pm 10\%$ input change.
Load regulation:	$<0.5\%$ at rated output.
Temperature coefficient:	$<100\text{ppm}/\text{oC}$ at rated output
Drift (after 1 hour warm up):	100ppm per hour, 200ppm per 8 hours.
Control: V for CV and C for CC option	0 to $+5\text{V}$ analogue input for rated negative or positive output, accuracy $\pm 2\%$, Zin 100K.
Compliance input: Current for CV option, Voltage for CC option	0 to $+5\text{V}$ analogue input for rated output, accuracy $\pm 2\%$, Zin 100K. User accessible preset potentiometer, 0 to $+5.1\text{V}$ available (pin 3).
Mode input (RCD types):	TTL: Hi = constant voltage, Lo = constant current, internal $+5\text{V}$ pull up.
Voltage & Current monitors:	0 to $+5\text{V}$ (*10V for nA types) for rated negative or positive output, accuracy $\pm 2\%$, Zout 10K.
Polarity input	TTL: Hi = +ve, Lo = -ve, internal $+5\text{V}$ pull up.
Safety	Conforms to EN61010-1:2001 (stored charge is $<45\mu\text{C}$).

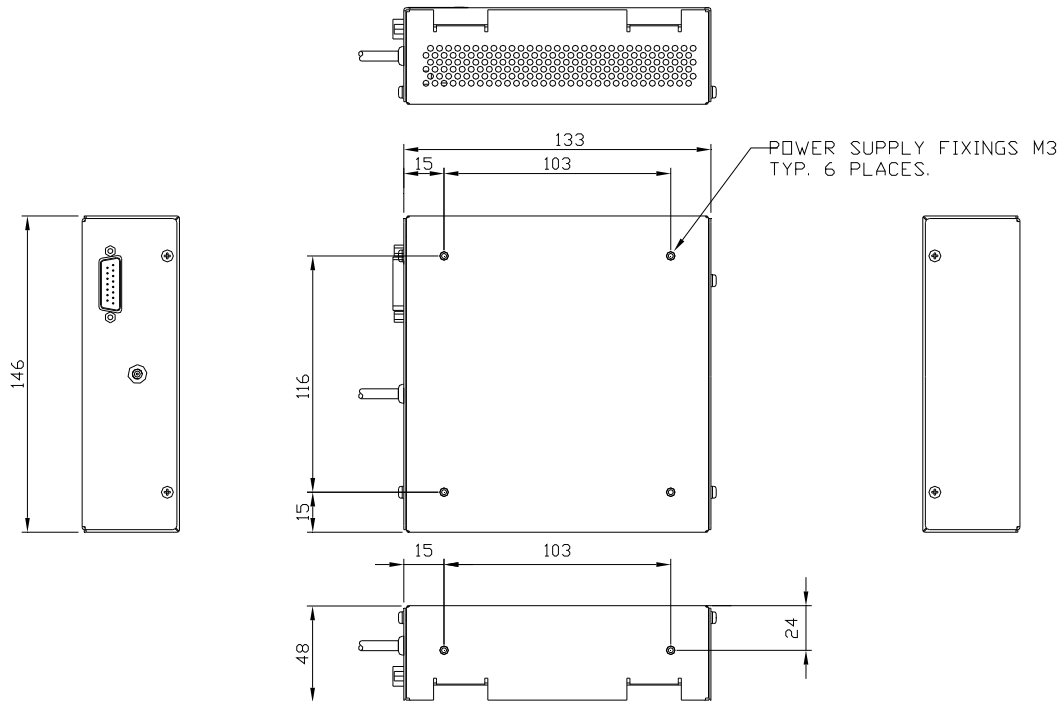
Mechanical Specification

Dimensions	146 x 133 x 48 mm (5.75" x 5.25" x 1.9")
Weight	1200g (2.6 lb) approx
Mountings	6 off blind M3 bushes
Input & control	15 way "D" connector
Output (Un-terminated cable)	CV only types: 0.75m of URM 76 cable. CC and nano amp monitor types 0.75m of Belden cable.

Environmental Specification

Operating temperature range	+10 to 45°C, indoor use only
Storage temperature range	-10 to +75°C
Operating altitude	2000m
Storage altitude	18000m
Operating humidity	80% for temperatures up to 31°C, decrease linearly to 50%RH at 40°C
Storage humidity	<95% RH non-condensing
Pollution	Pollution categories II

Pin	Assignment	Pin	Assignment
1	Master control input (0-5V)	9	Analogue ground
2	Compliance control input (0-5V)	10	Current monitor output (0 to +5V / *10V for nA types)
3	Variable reference output (0-5.1V)	11	Voltage monitor output (0 to +5V)
4	Mode control input (TTL) Hi=Volt, Lo=current	12	Enable input (TTL) Hi or o/c =Off, Lo=On
5-7	Power, return (0V)	13-15	Power, +24V supply
8	Polarity control input (TTL) Hi= +ve, Lo= -ve		



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