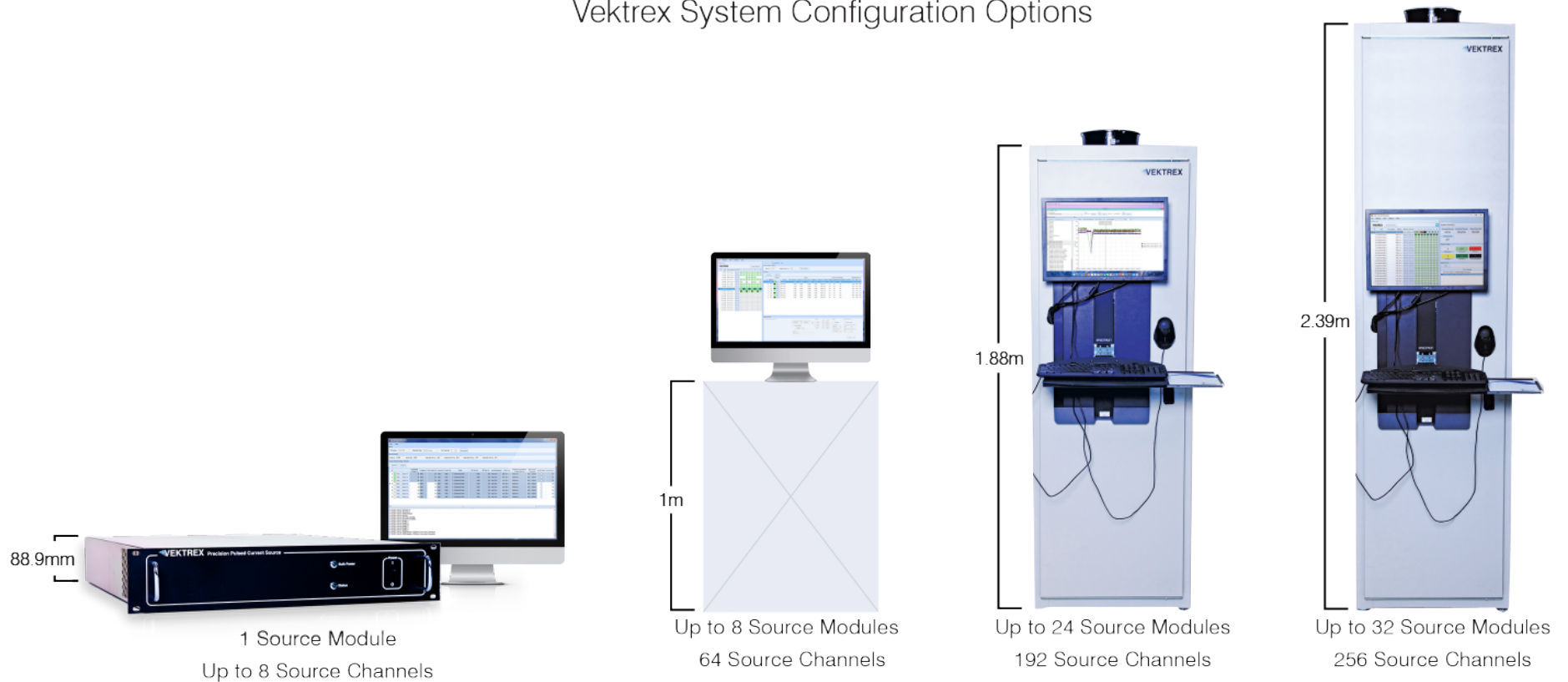




SpikeSafe™ DC Current Source Specifications

Mode Descriptions		
Mode	Description	Typical Application
DC	Constant current.	Any constant current application. LM-85, light measurement, characterization, R&D, production, LM-80, reliability, burn-in.

Vektrex System Configuration Options



Specifications	Model (Max Current)						
	0.5	1	2	3	4	5	7.5
Overall							
Recommended Min Current ²	339 μ A			5.9mA			35.7mA
Min Output Voltage	0V						
Max Output Voltage	50V, 100V, 200V, 300V, 400V					50V, 100V, 200V	50V
Independent Channels/Module	1, 2, 4, 8						
Max Power, per Channel ³	200W	400W	800W		1kW		375W
Max Power, all Channels ³	1.6kW	3.2kW	6.4kW		8kW		3kW
Output Conductor Pairs/Channel	1						
Conversion Mode	Buck/Boost					Buck	
Low Range Current							
Max Current	40mA			200mA			400mA
Setpoint Resolution	1 μ A			5 μ A			10 μ A
Output Current Accuracy	0.05%+10 μ A			0.04%+175 μ A			0.2%+1mA
Current Measure Accuracy ⁵	0.7%+200 μ A	0.4%+5mA			0.1%+1mA		0.5%+5mA
High Range Current							
Max Current	500mA	1A	2A	3A	4A	5A	7.5A
Setpoint Resolution	10 μ A	50 μ A		100 μ A			200 μ A
Output Current Accuracy	0.05%+75 μ A	0.08%+500 μ A		0.14%+2mA			0.3%+3mA
Current Measure Accuracy ⁵	0.2%+1mA	0.4%+5mA					0.5%+12mA
Misc.							
Nominal Current Ripple ¹	0.01%+160 μ A	<1A: 0.03%+300 μ A >1A: 0.06%		<1A: 0.03%+300 μ A >1A: 0.03%+500 μ A		<1A: 0.03%+300 μ A >1A: 0.012%+1mA	<1A: 0.03%+300 μ A >1A: 0.03%+1mA
DC Ramp Rate: Low Speed Setting	10V/s, 50mA/s						
DC Ramp Rate: Default Setting	10V/s, 500mA/s						
DC Ramp Rate: High Speed Setting	1000V/s, 50A/s						
Current Stability ⁴	70ppm						
Voltage Measure Accuracy ⁵	3%+1V						

Specifications	Model (Max Current)								
	10	12.5	15	20	25	30	40	50	60
Overall									
Recommended Min Current ²	11.8mA	71mA		23.6mA	143mA		47.3mA	285mA	
Min Output Voltage	0V								
Max Output Voltage	50V, 100V, 200V	50V, 100V	50V	50V, 100V, 200V	50V, 100V	50V	50V, 100V, 200V	50V, 100V	50V
Independent Channels/Module	1, 2, 4			1, 2			1		
Max Power, per Channel ³	1.6kW	1.25kW	750W	3.2kW	2.5kW	1.5kW	6.4kW	5kW	3kW
Max Power, all Channels ³	6.4kW	5kW	3kW	6.4kW	5kW	3kW	6.4kW	5kW	3kW
Output Conductor Pairs/Channel	2			4			8		
Conversion Mode	Buck								
Low Range Current									
Max Current	400mA	800mA			1.6A			3.2A	
Setpoint Resolution	10 μ A	20 μ A			40 μ A			80 μ A	
Output Current Accuracy	0.04%+350 μ A	0.2%+2mA		0.04%+700 μ A	0.2%+4mA		0.04%+1.4mA	0.2%+8mA	
Current Measure Accuracy ⁵	0.4%+10mA	0.5%+10mA		0.4%+20mA	0.5%+20mA		0.4%+40mA	0.5%+40mA	
High Range Current									
Max Current	10A	12.5A	15A	20A	25A	30A	40A	50A	60A
Setpoint Resolution	200 μ A	400 μ A			800 μ A			1.6mA	
Output Current Accuracy	0.14%+4mA	0.3%+6mA		0.14%+8mA	0.3%+12mA		0.14%+16mA	0.3%+24mA	
Current Measure Accuracy ⁵	0.4%+10mA	0.5%+10mA		0.4%+20mA	0.5%+20mA		0.4%+40mA	0.5%+40mA	
Misc.									
Nominal Current Ripple ¹	<1A: 0.03%+300 μ A >1A: 0.012%+2mA	<5A: 0.03%+300 μ A >5A: 0.01%+2mA	<5A: 0.05%+250 μ A >5A: 0.02%+1.8mA	<5A: 0.05%+250 μ A >5A: 0.02%+1.5mA	<5A: 0.05%+250 μ A >5A: 0.02%+4mA	<10A: 0.05%+200 μ A >10A: 0.02%+3mA			
DC Ramp Rate: Low Speed Setting	10V/s, 100mA/s			10V/s, 200mA/s			10V/s, 400mA/s		
DC Ramp Rate: Default Setting	10V/s, 1A/s			10V/s, 2A/s			10V/s, 4A/s		
DC Ramp Rate: High Speed Setting	1000V/s, 100A/s			1000V/s, 200A/s			1000V/s, 400A/s		
Current Stability ⁴	70ppm								
Voltage Measure Accuracy ⁵	3%+1V								

Specifications

Available Packages

M-Module	Circuit card module compatible with Vektrex systems
2U-Chassis	Rack mount / benchtop chassis 89mmH x 483mmW x 635mmD (including handles)

External Interfaces

Remote Pause	Optoisolated input, pauses output, selectable polarity
Remote Disable	Optoisolated input, halts output, selectable polarity
Output Current Drive Type	Differential drive
Output Cabling	Single or multiconductor twisted pair
Recommended Max Output Cable Length	20m

Input Power

A/C Power	Selectable; single and three phase available; 50-60Hz
Power Conversion	Two-stage: DC-DC converter + analog current regulator

General

Remote Control	100-base T Ethernet, TCP/IP with SCPI syntax
Monitoring System	Built-in acquisition system monitors & reports voltage, current, and fault conditions
Device Protection	2nd generation SpikeSafe™ protection including high-speed over current shutdown, slow start up, leakage detection and other protection algorithms
Calibration Interval	2 years
Operating Conditions	For indoor use only, 10 to 35C, 70%R.H., <2000m altitude
Cooling	Air cooled
Particulate Level	Clean lab conditions
Other	CE, RoHS

Notes

All specifications at 23C+/-5C

¹ RMS, 20MHz BW, primary frequency 100kHz or 200kHz

² Output current that guarantees 3% accuracy at calibration limit

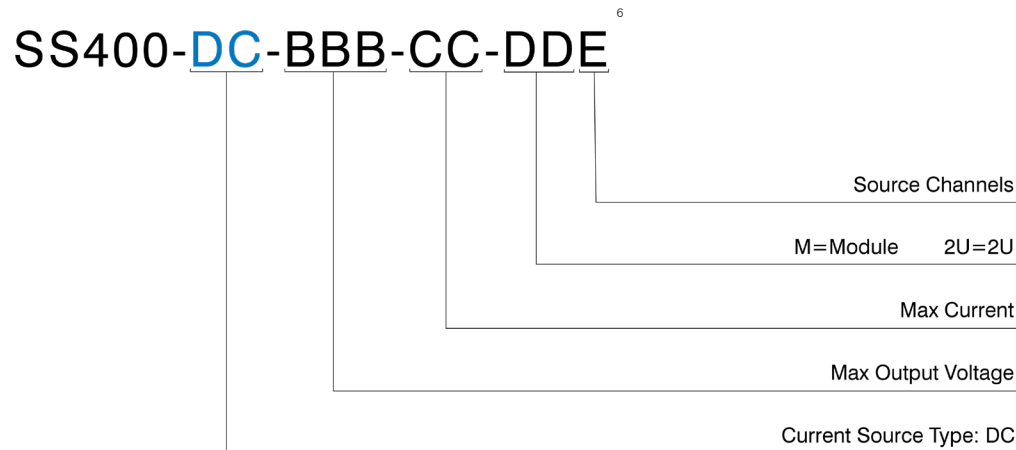
³ With suitable auxiliary bulk power supply: $V_{bulk} \geq \text{Compliance Voltage} + 20V$ for Buck models, Compliance Voltage/2 for Buck/Boost Models

⁴ Typical p-p current variation over 1 hour, after warm up at 23C

⁵ 2-wire measurement designed for load monitoring. $I > I_{min}$. SpikeSafe DC Current Sources may be paired with available high-speed DMM's for precise voltage and current measurements

⁶ Additional power options must be specified. Contact your sales representative or email sales@vektrex.com

Model Number Guide



Email sales@vektrex.com or visit www.vektrex.com to get more information and request a quote.