



ULTRAVOLT® E SERIES
PRECISION HIGH VOLTAGE POWER SUPPLIES





Single-output precision high voltage power supply modules

The E series of precision high voltage power supplies has very low ripple, excellent linearity, and very stable temperature characteristics. Models in this series are offered at two levels of performance; the best delivers 10 ppm characteristics. This series is ideal for applications where system performance is directly linked to high voltage power quality and performance.

Features

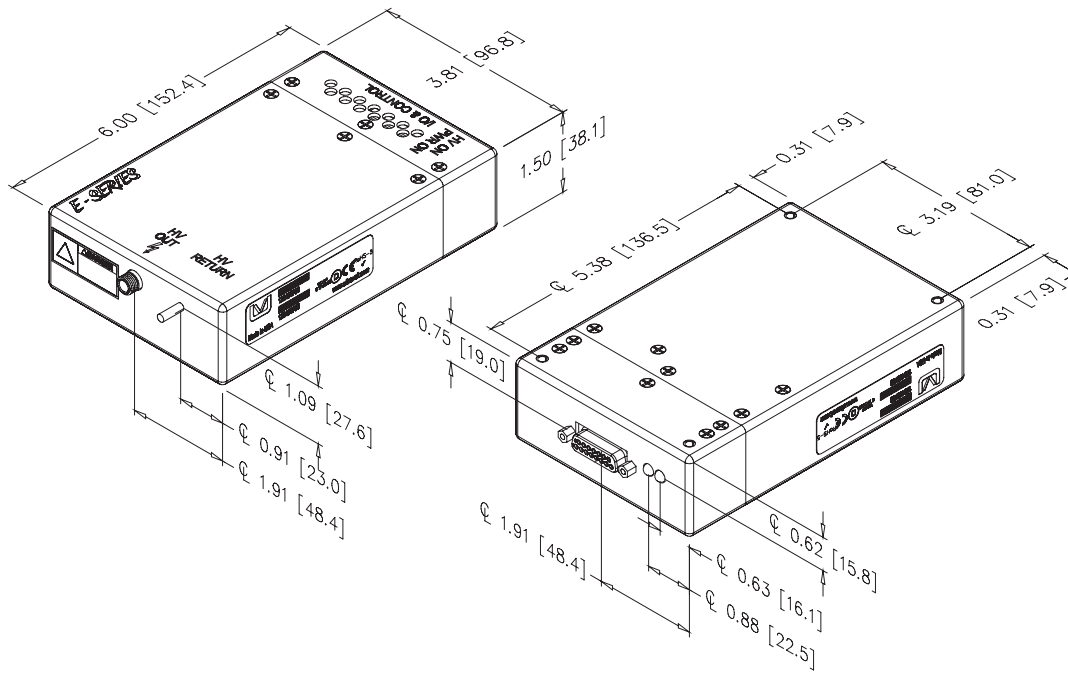
- › Precision output voltage from 0 to 1 kV through 0 to 15 kV
- › PPM level ripple, regulation, and stability
- › As low as 10 ppm temperature coefficient and reference
- › 0 to 4, 15/20, or 30 W of output power
- › Maximum load capability down to 0 V
- › Voltage and current regulation/limit capability
- › Precision output voltage and current monitors

Typical Applications

- › Bias supplies
- › Mass spectrometry
- › SEM/FIB
- › Electron beams
- › Ion beams



Parameter		Conditions		Models																		Units
Input				All Types																		
Voltage Range		Full Power		+23 to 30																		VDC
Current		Standby/Disable		< 50																		mA
Current		No Load, Max Eout		< 325																		mA
Current		Full Load, Max Eout		2.5																		A
AC Ripple Current		Nominal Input, Full Load		< 10																		mA pk to pk
Output				1E			2E			4E			6E			10E			15E			
Voltage Range		Nominal Input		0 to 1000			0 to 2000			0 to 4000			0 to 6000			0 to 10000			0 to 15000			VDC
Nominal Input Voltage/Model				24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	VDC
Power		Nominal Input, Max Eout		4	20	30	4	20	30	4	20	30	4	20	30	4	15	30	4	15	30	Watts
Current		Iout Entire Output Voltage Range		4	20	30	2	10	15	1	5	7.5	0.67	3.3	5	0.4	1.5	3	0.26	1	2	mA
Voltage Monitor		Normal Operating Conditions		0 to 10 ±0.5%																		VDC
Current Monitor		Normal Operating Conditions		0 to 10 ±0.5%																		VDC
Ripple		Full Load, Max Eout		≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	ppm
Line Regulation		Nom Input, Max Eout, Full Power		< 25 ppm or < 10 ppm																		VDC
Static Load Regulation		No Load to Full Load, Max Eout		< 25 ppm or < 10 ppm																		VDC
Stability		30 Min Warmup, Per 8 h, Per Day		< 25 ppm or < 10 ppm																		VDC
Programming and Controls				All Types																		
Input Impedance		Nominal Input		10																		MΩ
Adjust Accuracy and Adjust Linearity		10 to 100%		±0.05%																		%
Adjust Voltage		Differential		0 to +10																		VDC
Output Voltage		T = +25°C, Initial Value		+10.00 ±0.05%																		VDC
Max Source Current		T = +25°C		5																		mA
Output Impedance		Normal Operating Conditions		Buffered, low impedance, 2 mA max for source/sink current																		-
Enable/Disable				0 to +0.8 disable, +2.5 to 10 enable (default = disable)																		VDC
Environmental				All Types																		
Operating		Full Load, Max Eout, Case Temp.		+10 to +45																		°C
Temperature Coefficient		Over the Specified Temperature		±25 or ±10																		ppm/°C
Thermal Shock		Mil-Std-810, Method 504, Class 2		-40 to +65																		°C
Storage		Non-Operating, Case Temp.		-55 to +105																		°C
Humidity		All Conditions, Standard Package		0 to 95%, non-condensing																		-
Altitude		Standard Package, All Conditions		Sea level through 10,000																		ft
Shock		Mil-Std-810, Method 516, Proc. 4		20																		Gs
Vibration		Mil-Std-810, Method 514, Fig. 514-3		10																		Gs



Note: Downloadable drawings (complete with mounting and pin information) and 3D models are available online.

PHYSICAL SPECIFICATIONS

Construction

Material	Aluminum alloy 5052-H32
Finish	Anodize MIL-A-8625E blue

Size

Volume	561.9 cc (34.29 in ³)
Weight	1.1 kg (2.4 lb)

Tolerance

Overall	±1.27 mm (0.030")
Pin to Pin	±0.38 mm (0.015")
Mounting Hole Location	±0.64 mm (0.025")

Connections

D-Sub	15-pin, female
HV Connector	LGH1/2L
HV Return	#6-32 x 0.437 long threaded post

E SERIES INPUT CONNECTOR PINOUT AND FUNCTIONS

Pin	Description	Function
1	Reference Voltage	(+)10.00 V PRECISION REFERENCE
2	Voltage Programming -	0 TO 10 V TO PROGRAM FULL OUTPUT VOLTAGE
3	Voltage Programming +	PROGRAMMING INPUT IS DIFFERENTIAL BETWEEN PINS 2 AND 3.
4	Voltage Monitor	0 TO +10 V REPRESENTS 0 TO FULL OUTPUT VOLTAGE
5	Voltage Mode Indicator	OPEN DRAIN ACTIVE LOW WHEN IN VOLTAGE CONTROL
6	Signal Ground	REFERENCE ALL CONTROL SIGNALS HERE.
7	Input Power	+23 TO +30 V
8	Input Power	
9	Power Ground	
10	Power Ground	INPUT POWER RETURN
11	Enable	
12	Current Monitor	0 TO +10 V REPRESENTS 0 TO FULL OUTPUT CURRENT
13	Current Programming	0 TO +10 V SETS CURRENT FROM 0 TO FULL RATED OUTPUT CURRENT
14	Current Mode Indicator	OPEN DRAIN ACTIVE LOW WHEN IN CURRENT CONTROL
15	Signal Ground	REFERENCE ALL CONTROL SIGNALS HERE.

NOTE: Use stud next to high voltage output connector as HV return. A secure ground connection here is critical to safety and proper operation.

ORDERING INFORMATION

Type	0 to 1000 VDC Output	1E
	0 to 2000 VDC Output	2E
	0 to 4000 VDC Output	4E
	0 to 6000 VDC Output	6E
	0 to 10,000 VDC Output	10E
	0 to 15,000 VDC Output	15E
Input	24 V Input	24
Polarity	Positive Output	-P
	Negative Output	-N
Power	4 W Output	4
	15 W Output (10 and 15 kV only)	15
	20 W Output (1 to 6 kV only)	20
	30 W Output	30
Performance		
Level	10 ppm Line/Load Regulation, Stability, and Temp. Coefficient	-10 ppm
	25 ppm Line/Load Regulation, Stability, and Temp. Coefficient	-25 ppm
Connectors	LGH	(Standard)
	5 kV, SHV Type	-SHV-5 kV
	10 kV, BNC Type	-BNC-10 kV

Popular accessories ordered with this product include our full range of high voltage output connectors. (See Accessories and Connectors datasheet.)



Non-RoHS compliant units are available.
Please contact the factory for more
information.





For international contact information, visit
advanced-energy.com.

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- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
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