## **E SERIES** Precision High Voltage Power Supply

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 with a 10ppm temperature coefficient and reference. The control and monitoring functions are available on a standard DB15 female connector.

<u>Typical applications</u> for the E Series include the following: mass spectrometry, electron beams, ion beams, and contraband detection.

- Precision output voltage from 0 to 1kV thru 0 to 15kV
- 4, 15/20, or 30 watts of output power
- Maximum Iout capability down to 0 Volts
- Current regulation standard

- Wide input voltage range
- Output current monitor
- As low as 10ppm temperature coefficient and reference
- PPM level ripple
- PPM level regulation and stability

PARAMETER	CONDITIONS		MODELS UN							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 p-p								
OUTPUT		1E		2E			4E			6E				)E		15E				
Voltage Range	Nominal Input	0 to 1,000 0 to 2,000		0 to 4,000			0 to 6,000			0 to 10,000			0	to 15,0	000	VDC				
Nominal Input Voltage / Model		24	24	24	24	24	24	24	24	24	24	1 24	24	24	24	4 24	24	24	24	VDC
Power	Nominal Input, Max Eout	4	20	30	4	20	30	4	20	30	4	20	30	4	15	5 30	4	15	30	Watts
Current	lout Entire Output Voltage Range	4	20	30	2	10	15	1	5	7.5	0.67	7 3.3	5	0.4	1.5	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 ±0.1%								VDC									
Ripple	Full Load, Max Eout	≤ 10	$\leq 10 \hspace{0.2cm} \leq 10 \hspace{0.2cm} $							PPM										
Line Regulation	Nom. Input, Max Eout, Full Power		< 25ppm or < 10ppm								VDC									
Static Load Regulation	No Load to Full Load, Max Eout		<25ppm or < 10ppm								VDC									
Stability	30 Min. warmup, per 8 hr/ per day	< 25ppm or < 10ppm							VDC											
PROGRAMMING	& CONTROLS								A	LL 1	ΓYΡ	PES								
Input Impedance	Nominal Input									1	0									MΩ
Adjust Accuracy & Adjust Line	arity 10% to 100%									0.	5%									%
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	1							mA											
Output Impedance	Normal Operating Conditions	Buffered, low impedance, 2mA max for source/sink current							-											
Enable/Disable			0 to $+0.8$ Disable, $+2.5$ to 10 Enable (Default = Disable)														VDC			
ENVIRONMENTA	L								A	LL 1	ΓYΡ	PES								
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							G's											
Vibration	Mil-Std-810, Method 514, Fig. 514-3	10							G's											

Specifications subject to change without notice.





available. Please contact the

E SERIES INPUT CONNECTOR PINOUT AND FUNCTIONS

(+)10.00V precision reference

Reference all control signals here

Reference all control signals here

NOTE: Use stud next to High Voltage output connector as HV Return, a secure ground

0 to 10 volts to program full output voltage

Programming input is differential between pins 2 and 3

0 to +10 volts represents 0 to full output voltage

TTL high to enable, low to disable, default is OFF

0 to +10 volts represents 0 to full output current

Open drain active low when in current control

0 to +10 volts sets current from 0 to full rated output

Open drain active low when in voltage control

**FUNCTION** 

+23 to +30V

current

connection here is critical to safety and proper operation.

Input Power Return

**COMPLIANT** factory for more information.

PIN DESCRIPTION

1 2

3

4

5

6

7

8

9

10

11

12

13

14

15

Rev. H 2/13

**Reference Voltage** 

Voltage Monitor

Signal Ground

Input Power

Input Power

Power Ground

Power Ground

Signal Ground

Current Programming

Current Mode Indicator

Enable **Current Monitor** 

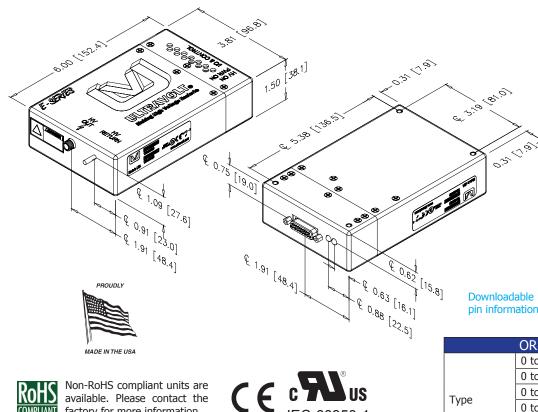
Voltage Programming -

Voltage Programming +

Voltage Mode Indicator

# **E SERIES**

Precision High Voltage Power Supply



IFC-60950-1

### CONSTRUCTION

Material: Aluminum Alloy 5052-H32 Finish: Anodize MIL-A-8625E Blue

#### SIZE

Volume 34.29 in<sup>3</sup> (561.9cc) Weight 2.4lbs (1.1kg)

#### TOLERANCE

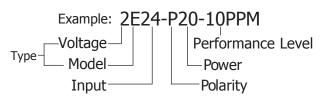
Overall ± 0.030" (1.27) Pin to Pin  $\pm$  0.015" (0.38) Mounting Hole Location  $\pm$  0.025" (0.64)

#### CONNECTIONS

D-Sub 15 Pin Female HV Connector, LGH1/2L HV Return, #6-32 x 0.437 Long Threaded Post

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

	ORDERING INFORMATION			
	0 to 1,000 VDC Output	1E		
	0 to 2,000 VDC Output	2E		
Туре	0 to 4,000 VDC Output	4E		
	0 to 6,000 VDC Output	6E		
	0 to 10,000 VDC Output	10E		
	0 to 15,000 VDC Output	15E		
Input	24V Input	24		
Delarity (	Positive Output	-P		
Polarity	Negative Output	-N		
Power	4 Watts Output	4		
	15 Watts Output (10kV & 15kV only)	15		
FOWEI	20 Watts Output (1kV to 6kV only)	20		
	30 Watts Output	30		
Performance	10ppm Line/Load Regulation, Stability, and Temp. Co.	-10PPM		
Level	25ppm Line/Load Regulation, Stability, and Temp. Co.	-25PPM		
	LGH	(Standard)		
Connectors	5kV, SHV Type	-SHV-5KV		
	10kV, BNC Type	-BNC-10KV		



Popular accessories ordered with this product include our full range of high voltage output connectors (see Accessories & Connectors data sheet).

