



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 | INPUT POWER RETURN |
| 10 | Power Ground | |
| 11 | Enable | TTL HIGH TO ENABLE, LOW TO DISABLE, DEFAULT IS OFF |
| 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.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

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- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
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- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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