REMOTE CONTROL:
The “A” Series is remotely programmed with 0 to +5 VDC to produce an output voltage. Input may be from a control voltage, DAC, variable or fixed resistor. On a negative output converter the programming logic of the remote adjust would be inverted, i.e. -5 to 0 VDC. Connections are on the converter for the internal reference, analog remote adjust and the signal ground. The reference is +5 VDC, temperature compensated with a 464 ohm output impedance. See Figure E & F or Application Note 1 for more information.

STANDBY MODE:
The “A” converters also have an enable function. When the enable is TTL 0 (<+0.7V Isink=1mA) the converter is in a standby mode and input current is reduced to < 30 mA. All functions other than the internal reference are shut down. When the enable is TTL 1 or at all voltages up to +32 VDC the converter operate normally. The open circuit output voltage from the Enable pin is < +5 VDC. In the inhibit mode 1 mA will have to be sunk for proper shutdown.

MECHANICAL:
“A” Series converters are in PCB mountable plastic cases requiring a footprint of 5.5 In² and only 4.3 In³ of volume. Mounting plates and brackets are available for chassis mounting. This Series is also available in an RF-Tight and mounting configurations. All models are available with optional six-sided wrap-around Mu-Metal Shielding.

ENVIRONMENTAL:
The “A” Series provides full power operation at case temperatures from -40 to +65°C. All units receive a 24-hour burn-in prior to final testing. Extended temperature range is available along with other enhanced capabilities. Please contact the factory.

GENERAL INFORMATION:
The “A” Series of High Voltage Regulated DC-DC converters address the needs of the miniature PCB mount regulated high voltage power supply user. Designed and built utilizing state of the art power conversion topology, these units feature surface mount technology and encapsulation techniques providing high reliability and low cost.

DESIGN METHODOLOGY:
The “A” converters utilize a dual ended forward converter topology with a nominal switch frequency of <100kHz. A precision reference is provided so the remote control can program the power supply for a specific voltage. Once input voltage stabilizes, Under-voltage lockout is released. As soon as enable is raised above a TTL 1, the converter begins to switch. The soft-start circuit brings the converter to full power over a 1ms period, reducing surges on the source supply. A constant frequency PWM regulation system controls the MOSFET push-pull power stage which drives the high voltage transformer. The power stage is protected from output current overloads or short circuits via a secondary current limit circuit. High voltage is developed by a multistage multiplier while feedback voltage is developed and sent to the CTRL circuit to maintain regulation. Internal filters are provided to reduce input current ripple and output voltage ripple.

WIDE INPUT RANGE:
The “A” Series is designed for full power operation at up to 90% efficiencies. A wide input range of +11 to +16 VDC or +23 to +30 VDC will maintain full power output without derating. The derated input range is +9 to +32VDC. See Application Note 16 for protection information.

WIDE OUTPUT RANGE:
The “A” Series is a non-isolated, unipolar converter. Positive or negative output must be specified. Output voltage is adjustable from 0 to 62, 125, 250, 500, 1kV, 2kV, 4kV, or 6kV. As the output voltage is reduced towards 0, the maximum current capability remains unchanged.

OUTPUT CURRENT MONITOR:
The “A” Series features an output current monitor. Current from the high voltage multiplier can be monitored by reading the voltage appearing between Output Monitor pin 3 and Signal Ground Return pin 5. Internal voltage dividers create a small linear offset voltage. See Application Note 13.
Typical Characteristics:

**Parameter** | **Conditions** | **Models** | **Units**
---|---|---|---
**Input:**
Voltage Range | Full Power | 12V | ±11 to 15
| Variable Power Range | 24V | ±20 to 30
Current | Steady/Disable | 12V | A
Current | Max Load, Max End | 24V | W
**Dynamic Load Regulation** | Max Load, Extended Input Voltage | 12V | ±0.25% ±0.5% ±1% ±2%
| Full Load, Max End | 24V | ±0.25% ±0.5% ±1% ±2%
**Output:**
Voltage Range | Nominal Input | 12V | ±15%
| Nominal Input Voltage | 24V | ±20%
Power | Nominal, Max End | 12V | W
Current | Full Range/Output Voltage Range | 24V | A
Repeatability | Full Load, Max End | 12V | %
Junction Temperature | -75 to 86 | 24V | °C
**Specifications subject to change without notice**
“A” SERIES
HIGH VOLTAGE POWER SUPPLY

PLASTIC CASE
CONSTRUCTION:
Epoxy Filled DAP Box
Certified to MIL-M-14F
MDG-F
TOLERANCE:
Overall ± 0.050”
Pin to Pin ± 0.015”
#2-56 Standoffs may not be flush to cover

NOTE:
20 & 30 Watt versions are an additional 0.062” in height
Contact UV Customer Service for drawings on models equipped with -E or -H options.

METAL CASE
CONSTRUCTION:
Epoxy Filled Aluminum Box
Chem Film per MIL-C-5541
Class 1A
TOLERANCE:
Overall ± 0.025”
Pin to Pin ± 0.015”

Ordering Information

<table>
<thead>
<tr>
<th>Type</th>
<th>Voltage Output</th>
<th>Power</th>
<th>Option (Case)</th>
<th>Polarity</th>
<th>Power Supply Ground Return</th>
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<td></td>
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<tr>
<td>0 to 125 VDC Output</td>
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<tr>
<td>0 to 250 VDC Output</td>
<td>1/2A</td>
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<td>Positive</td>
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<tr>
<td>0 to 500 VDC Output</td>
<td>2A</td>
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<td>Positive</td>
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<tr>
<td>0 to 1,000 VDC Output</td>
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</tr>
<tr>
<td>0 to 2,000 VDC Output</td>
<td>6A</td>
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<td>0 to 6,000 VDC Output</td>
<td></td>
<td></td>
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<td>Positive</td>
<td></td>
</tr>
</tbody>
</table>

Example: 1/2A24-P20-C

Contact UV Customer Service for drawings on models equipped with -E or -H options.
Bipolar High Power “C” SERIES
HIGH VOLTAGE POWER SUPPLY

- 8 Models from 0 to ±125 Volts through 0 to ±6kV
- 125 or 250 Watts of total output power
- Dual Independently Controlled Outputs
- Output Current and Voltage Monitors
- Maximum Iouts down to 0 Volts
- Fast Trise with very low overshoot
- High Power to Voltage density
- >200,000 hour MTBF at 65°C
- Output short-circuit protection
- Fixed Frequency Low Stored Energy Design

GENERAL INFORMATION:
The Bi-Polar “C” series line of regulated DC to DC high voltage converters is an extension to the High Power “C” series. Bi-Polar “C” series units contain a pair of + and -standard product 60 watt or 125 watt high power “C” series assemblies providing a total of 125 watts or 250 watts. By encapsulating a module pair within one case, the cost of testing, potting, burn in and system integration is reduced.
The ± HV output pair is packaged into UltraVolt’s 4.5” x 8” x 1.1” standard case. This high power density is especially suited to high-energy pulsers, amplifiers and discharge devices with large capacitance, fast repetition rates or high current loads. See Application Note 10 for more charging information. See the High Power “C” series datasheet for detailed specifications.

COMPATIBILITY:
The Bi-Polar “C” series matches the standard UltraVolt 60 watt / 125 watt High Power “C” series for all electrical functions & design methodology including; wide input range, remote control, enable/disable, output monitors, and local +5 Vdc reference output.

HIGH VOLTAGE OUTPUT:
The Bi-Polar “C” series, like all high power “C” units, are non-isolated converters. Output range is adjustable independently from 0 to ±125, ±250, ±500, ±1kV, ±2kV, ±4kV, or ±6kV on all 60Wx2 and 125Wx2 models. As the output voltage is reduced towards 0, the maximum current capability remains unchanged.

ENVIRONMENT:
The high power Bi-Polar “C” series provides full power at Case temperature from -40 to +65°C. Extended temperature range is available along with enhanced capabilities. Please contact the factory. All units receive a 24-hour burn in prior to final testing.

OUTPUT CURRENT & VOLTAGE MONITORS:
The Bi-Polar “C” series units contain two pairs of output voltage & current monitors, one pair for the + HVPS, one pair for the - HVPS. See the high power “C” series data sheet along with the Application Note 13 and Connection Drawing #3 for more details.

HV & LV CONNECTIONS:
Each independent HVPS in Bi-Polar “C” series has a dedicated input power & control connector. These connectors are standard dual row 7 pin headers. Each HVPS also has a dedicated HV ground return 2-pin header and HV output 2-pin header.

MECHANICAL:
The Bi-Polar “C” series converters are packaged in aluminum enclosures. Both the 125w(60wx2) and the 250w(125Wx2) versions use the 38in package. Chassis wall mounting is facilitated with four #8-32 studs. Thermal grease or elastomer should be used prior to mounting. Optional heatsink bracket allows the unit to be surface mounted with the #8 studs removed. Optional vertical mounting bracket & fins allow the units to be stacked side by side.

ENVIRONMENT:
The high power Bi-Polar “C” series provides full power at Case temperature from -40 to +65°C. Extended temperature range is available along with enhanced capabilities. Please contact the factory. All units receive a 24-hour burn in prior to final testing.

OUTPUT CURRENT & VOLTAGE MONITORS:
The Bi-Polar “C” series units contain two pairs of output voltage & current monitors, one pair for the + HVPS, one pair for the ± HVPS. See the high power “C” series data sheet along with the Application Note 13 and Connection Drawing #3 for more details.

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COMPATIBILITY:
The Bi-Polar “C” series matches the standard UltraVolt 60 watt / 125 watt High Power “C” series for all electrical functions & design methodology including; wide input range, remote control, enable/disable, output monitors, and local +5 Vdc reference output.

HIGH VOLTAGE OUTPUT:
The Bi-Polar “C” series, like all high power “C” units, are non-isolated converters. Output range is adjustable independently from 0 to ±125, ±250, ±500, ±1kV, ±2kV, ±4kV, or ±6kV on all 60Wx2 and 125Wx2 models. As the output voltage is reduced towards 0, the maximum current capability remains unchanged.

ENVIRONMENT:
The high power Bi-Polar “C” series provides full power at Case temperature from -40 to +65°C. Extended temperature range is available along with enhanced capabilities. Please contact the factory. All units receive a 24-hour burn in prior to final testing.

OUTPUT CURRENT & VOLTAGE MONITORS:
The Bi-Polar “C” series units contain two pairs of output voltage & current monitors, one pair for the + HVPS, one pair for the - HVPS. See the high power “C” series data sheet along with the Application Note 13 and Connection Drawing #3 for more details.

HV & LV CONNECTIONS:
Each independent HVPS in Bi-Polar “C” series has a dedicated input power & control connector. These connectors are standard dual row 7 pin headers. Each HVPS also has a dedicated HV ground return 2-pin header and HV output 2-pin header.

MECHANICAL:
The Bi-Polar “C” series converters are packaged in aluminum enclosures. Both the 125w(60wx2) and the 250w(125Wx2) versions use the 38in package. Chassis wall mounting is facilitated with four #8-32 studs. Thermal grease or elastomer should be used prior to mounting. Optional heatsink bracket allows the unit to be surface mounted with the #8 studs removed. Optional vertical mounting bracket & fins allow the units to be stacked side by side.

COMPATIBILITY:
The Bi-Polar “C” series matches the standard UltraVolt 60 watt / 125 watt High Power “C” series for all electrical functions & design methodology including; wide input range, remote control, enable/disable, output monitors, and local +5 Vdc reference output.

HIGH VOLTAGE OUTPUT:
The Bi-Polar “C” series, like all high power “C” units, are non-isolated converters. Output range is adjustable independently from 0 to ±125, ±250, ±500, ±1kV, ±2kV, ±4kV, or ±6kV on all 60Wx2 and 125Wx2 models. As the output voltage is reduced towards 0, the maximum current capability remains unchanged.

ENVIRONMENT:
The high power Bi-Polar “C” series provides full power at Case temperature from -40 to +65°C. Extended temperature range is available along with enhanced capabilities. Please contact the factory. All units receive a 24-hour burn in prior to final testing.
GENERAL INFORMATION:
The “C” Series of High Voltage Regulated DC-DC converters are designed for fast rise time/charging applications utilizing state of the art power conversion topology. Surface mount technology and encapsulation techniques provide high reliability and low cost. See Application Note AP-10 for more charging information.

DESIGN METHODOLOGY:
The “C” converters utilize a dual ended forward converter topology with a nominal switching frequency of <100 kHz. A precision reference is provided so the remote control can program the power supply for a specific voltage. A soft-start circuit brings the converter to full power over a 1ms period, reducing surges on the source supply. A constant frequency PWM regulation system controls the MOSFET push-pull power stage and high voltage transformer. The power stage is protected from output current overloads or short circuits via a secondary current limit circuit. This current limit is optimized for low impedance capacitor charging. The high voltage developed in the multistage multiplier generates feedback voltage which is sent to the CTRL circuit to maintain regulation. The AC feedback networks are configured for maximum speed of rise with little or no overshoot into capacitive loads.

WIDE INPUT VOLTAGE RANGE:
The “C” Series is designed for full DC power operation at up to 92% efficiencies. A wide input range of +23 to +30 VDC maintains full output power. The derated input range is +9 to +32 VDC. See Application Note AP-16 for protection information.

WIDE OUTPUT RANGE:
The “C” Series is a non-isolated, unipolar converter. Positive or negative output must be specified. Output voltage is adjustable from 0 to 62, 125, 250, 500, 1kV, 2kV, 4kV or 6kV. As the output voltage is reduced towards 0, the maximum current capability remains unchanged.

OUTPUT VOLTAGE & CURRENT MONITORS:
The “C” Series features a 100:1 voltage monitor. Units 2kV or higher have a 100 Megohm/1.1 Megohm divider, units below 2kV use a 10 Megohm/102k divider. The monitor output impedance is calibrated for use with a 10 Megohm input impedance meter. Overall accuracy is ±2.0% with a temperature coefficient of ±200 ppm per °C. The Voltage Monitor is output on pin 9 and referenced to Signal Ground pin 5. Current from the high voltage multiplier can be monitored by reading the voltage appearing between Output Monitor pin 3 and Signal Ground pin 5. See Application Note AP-13.

REMOTE CONTROL:
The “C” Series is remotely programmed with 0 to +5 VDC to produce an output voltage. Input may be from a control voltage, DAC, variable or fixed resistor. On a negative output converter the programming logic of the remote adjust would be inverted, i.e., +5 VDC to 0 VDC. Connections are on the converter for the internal reference, analog remote adjust and the signal ground. The reference is ±5.0 VDC, temperature compensated with a 464 ohm output impedance. See Figure E and Application Note AP-1 for more information.

ENABLE/DISABLE:
The “C” converters also have an enable function. When the enable is TTL 0 (<0.7V Isink=1mA) the converter is in a standby mode and input current is reduced to < 30 mA. All functions other than the internal reference are shut down. If the enable pin is left unconnected, TTL 1, or at greater voltages up to +32 VDC the converter will initiate soft-start before beginning to operate normally. The open circuit output voltage from the enable pin is < +5 VDC. In the inhibit mode 1mA will have to be sunk for proper shutdown.

MECHANICAL:
“C” Series converters are in PCB mountable plastic cases requiring a footprint of 5.5 In² and only 4.3 In³ of volume. Mounting plate and brackets are available for chassis mounting. This Series is also available in an RF-Tight metal PCB/chassis mount package. See Application Note AP-6 for thermal considerations and mounting configurations. All models are available with optional six-sided wrap-around Mu-Metal Shielding.

ENVIRONMENTAL:
The “C” Series provides full power operation at case temperatures from -40 to +65°C. All units receive a 24-hour burn-in prior to final testing. Extended temperature range is available along with other enhanced capabilities. Please contact the factory.
### Typical Characteristics:

**Parameter** | **Conditions** | **Models** | **Units**
--- | --- | --- | ---
Input Voltage Range | Full Power | +20 to 70 VDC | VDC
Input Voltage Range | Derated Power Range | +9 to 32 VDC | VDC
Current | 10 | mA | mA
Current | No Load, Max Input | < 50 mA | mA
Current | Max Load, Extended Input Voltage | Fig. A & B | Graph

**Output:**

| Voltage Range | Nominal Input | 0 to 10 | 0 to 20 | 0 to 30 | 0 to 40 | 0 to 50 | 0 to 60 | 0 to 70 | 0 to 80 | 0 to 90 | 0 to 100 | 0 to 125 | 0 to 200 | 0 to 300 | 0 to 500 | 0 to 1000 | 0 to 2000 | 0 to 4000 | 0 to 6000 VDC |
| Power | Normal Input | 10W | 20W | 30W | 40W | 50W | 60W | 70W | 80W | 90W | 100W | 125W | 200W | 300W | 500W | 1000W | 2000W | 4000W | 6000W |
| Current | Full Load, Max Input | < 50 mA | mA |

**Voltage Derating**

Max Load, Extended Input Voltage

Figures C & E

**Remote Programming:**

All Types

Input Impedance

Nominal Input

Typical Input Values

10W to 1000W (Pre-heat Envelope & Signal Ground), (Wiper to Adjust)

Adjustability

90% to 100%

Adjust Voltage

Referenced to signal ground

Figures E & F

Stability

<0.05% + 0.1% VDC

**Output Voltage Monitor**

All Types

Voltage Setting

Full Load Range, Full Load Range

±2% VDC

Programmability

Full Load Range, Full Load Range

±2% VDC

**Remote Control Characteristics:**

Model 1/8C

0.50 uF

Voltage Range Derated Power Range

+9 to 32 VDC

Model 1/4C

0.15 uF

Voltage Range Full Power

+10 to 30 VDC

Model 1/2C

0.16 uF

Voltage Range Full Power

+10 to 30 VDC

Model 2C

0.033 uF

Voltage Range Full Power

+23 to 30 VDC

Model 4C

0.009 uF

Voltage Range Full Power

+23 to 30 VDC

Model 6C

0.0064 uF

Voltage Range Full Power

+23 to 30 VDC

### Specifications subject to change without notice
## DUAL OUTPUT “AUX” SERIES

**HIGH VOLTAGE POWER SUPPLY**

- Adds a Second + or - HV Output
- Encapsulated with “A” or “C” Series HVPS
- Fixed Regulated Output
- Creates a 4.9 in. Dual Output Supply!
- Fixed Frequency low stored energy design
- High Power Density
- Output Short-Circuit Protected

### GENERAL INFORMATION:

The “AUX” Series Accessory provides a second fixed HV output in addition to the adjustable main high voltage power supply output. This second output is set for a specific fixed voltage at the factory. The “AUX” output is achieved by adding a daughter board inside the 1/16A to 6A or 1/16C to 6C high voltage power supplies.

This “AUX” board is encapsulated with the main high voltage power supply. All of the advantages of the base power supply remain. Typical applications are: Bi-Polar outputs, ionization/trigger, trigger coils, pulse generator or amplifiers, tube elements such as G1, G2, Cathode, etc.

### HIGH VOLTAGE “AUX” OUTPUT:

The “AUX” output is a non-isolated, unipolar output. Positive or negative output must be specified. The polarity of this “AUX” is not dependent on the polarity of the base HVPS.

Full capability is available over an input range of 12 to 15Vdc ±10% for 4W units and 24 to 28Vdc ±5% for 20W/30W units. The “AUX” fixed output is fully functional when the main output is adjusted from 100% to 75%. As the main output is adjusted from 75% to 50% the “AUX” output current is reduced from 100% to 0%. The manufactured tolerance on the fixed output is ±5%. Load regulation error is < 0.1%. Load regulation error is < 0.1% per 100mA. The output has a temperature co-efficient of ±0.01% per °C. Fixed outputs are available:

- 47V @ 2mA
- 94V @ 2mA
- 141V @ 2mA
- 188V @ 2mA
- 235V @ 2mA
- 282V @ 2mA
- 329V @ 2mA
- 450V @ 1mA
- 600V @ 1mA
- 750V @ 1mA
- 900V @ 1mA
- 1050V @ 1mA
- 1300V @ 1mA

### COMPATIBILITY:

The “AUX” series match the standard “A” or “C” series for design methodology, remote control, enable/disable, reference, shock and vibration. Designed and built utilizing a state-of-the-art power conversion topology, these units feature surface mount technology and isolation techniques providing high reliability and low cost. Base power supply output current rating remains at full value. Nominal input voltage should be used for maximum efficiency.

### SHIELDING:

All models are available with optional six-sided wrap-around Mu-Metal Shielding. This shielding attenuates magnetic and electrostatic emissions, while shielding ripple reduction circuitry from outside noise. The high voltage power supply dimensions change by only 0.010”.

### PACKAGING:

The auxiliary board is designed to be added to the “A” or “C” Series High Voltage Power Supply modules. The Combined plastic package is UltraVolt’s 4.9” x 4.9” plastic PCB mountable box with a footprint of only 5.5". As always, optional six-sided Mu-Metal shielding, mounting brackets, mounting plates and RF-Tight chassis-mount ruggedized enclosures are available.

### ENVIRONMENT:

The “AUX” Series meet the same environmental specifications for temperature, shock and vibration as the “A” and “C” series. All units receive a 24-hour burn-in prior to final test. Full capability is available over an input range of 12 to 15Vdc ±5% for 4W units and 24 to 28Vdc ±5% for 20W/30W units. The “AUX” output is a non-isolated, unipolar output. Positive or negative output must be specified. The polarity of this “AUX” is not dependent on the polarity of the base HVPS.

### GENERAL INFORMATION:

The “AUX” Series Accessory provides a second fixed HV output in addition to the adjustable main high voltage power supply output. This second output is set for a specific fixed voltage at the factory. The “AUX” output is achieved by adding a daughter board inside the 1/16A to 6A or 1/16C to 6C high voltage power supplies.

This “AUX” board is encapsulated with the main high voltage power supply. All of the advantages of the base power supply remain. Typical applications are: Bi-Polar outputs, ionization/trigger, trigger coils, pulse generator or amplifiers, tube elements such as G1, G2, Cathode, etc.

### HIGH VOLTAGE “AUX” OUTPUT:

The “AUX” output is a non-isolated, unipolar output. Positive or negative output must be specified. The polarity of this “AUX” is not dependent on the polarity of the base HVPS.

Full capability is available over an input range of 12 to 15Vdc ±10% for 4W units and 24 to 28Vdc ±5% for 20W/30W units. The “AUX” fixed output is fully functional when the main output is adjusted from 100% to 75%. As the main output is adjusted from 75% to 50% the “AUX” output current is reduced from 100% to 0%. The manufactured tolerance on the fixed output is ±5%. Load regulation error is < 0.1%. Load regulation error is < 0.1% per 100mA. The output has a temperature co-efficient of ±0.01% per °C. Fixed outputs are available:

- 47V @ 2mA
- 94V @ 2mA
- 141V @ 2mA
- 188V @ 2mA
- 235V @ 2mA
- 282V @ 2mA
- 329V @ 2mA
- 450V @ 1mA
- 600V @ 1mA
- 750V @ 1mA
- 900V @ 1mA
- 1050V @ 1mA

### COMPATIBILITY:

The “AUX” series match the standard “A” or “C” series for design methodology, remote control, enable/disable, reference, shock and vibration. Designed and built utilizing a state-of-the-art power conversion topology, these units feature surface mount technology and isolation techniques providing high reliability and low cost. Base power supply output current rating remains at full value. Nominal input voltage should be used for maximum efficiency.

### SHIELDING:

All models are available with optional six-sided wrap-around Mu-Metal Shielding. This shielding attenuates magnetic and electrostatic emissions, while shielding ripple reduction circuitry from outside noise. The high voltage power supply dimensions change by only 0.010”.

### PACKAGING:

The auxiliary board is designed to be added to the “A” or “C” Series High Voltage Power Supply modules. The Combined plastic package is UltraVolt’s 4.9” x 4.9” plastic PCB mountable box with a footprint of only 5.5". As always, optional six-sided Mu-Metal shielding, mounting brackets, mounting plates and RF-Tight chassis-mount ruggedized enclosures are available.

### ENVIRONMENT:

The “AUX” Series meets the same environmental specifications for temperature, shock and vibration as the “A” and “C” series. All units receive a 24-hour burn-in prior to final test. Extended temperature range is available along with other enhanced capabilities. Please contact the factory.
**“Our Ripple Stripper”**

Encapsulated with “A” Series power supplies
- Output Ripple Stripper® Filter
- Ultra low output ripple
- Output voltage monitor
- Fixed Frequency Low Stored Energy Design
- >400,000 Hrs MTBF @ 65°C
- UL-1950, CUL-950, IEC-950 Recognized

---

**“F” SERIES**

**HIGH VOLTAGE POWER SUPPLY ACCESSORY**

**PLASTIC CASE**
CONSTRUCTION:
Epoxy Filled DAP Box
Chemfilm per MIL-M-148

TOLERANCE:
Overall ±0.050”
Pin to Pin ±0.015”

NOTE:
20 & 30 Watt versions are an additional 0.062” in height
Contact UV Customer Service for drawings on models equipped with -E or -H options.

**METAL CASE**
CONSTRUCTION:
Epoxy Filled Aluminum Box
Chemfilm per MIL-C-5541
Class 1A
TOLERANCE:
Overall ±0.025”
Pin to Pin ±0.015”

---

**HIGH VOLTAGE OUTPUT FILTER:**
The “F” Series strips the typical output ripple on “A” Series High Voltage Power Supplies down to:

| Model     | Voltage | Power | With | With | 50% Lower Than |-
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
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<tbody>
<tr>
<td>1/16A12 62V</td>
<td>4W</td>
<td></td>
<td>±0.002%</td>
<td>±0.002%</td>
<td>-F</td>
</tr>
<tr>
<td>1/16A24 62V</td>
<td>20W</td>
<td></td>
<td>±0.003%</td>
<td>±0.004%</td>
<td>-F</td>
</tr>
<tr>
<td>1/16A24 62V</td>
<td>30W</td>
<td></td>
<td>±0.006%</td>
<td>±0.006%</td>
<td>-F</td>
</tr>
<tr>
<td>1/8A12 125V</td>
<td>4W</td>
<td></td>
<td>±0.002%</td>
<td>±0.002%</td>
<td>-F</td>
</tr>
<tr>
<td>1/8A24 125V</td>
<td>20W</td>
<td></td>
<td>±0.003%</td>
<td>±0.004%</td>
<td>-F</td>
</tr>
<tr>
<td>1/8A24 125V</td>
<td>30W</td>
<td></td>
<td>±0.006%</td>
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<td>-F</td>
</tr>
<tr>
<td>1/4A12 250V</td>
<td>4W</td>
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<td>±0.016%</td>
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<td>-F</td>
</tr>
<tr>
<td>1/4A24 250V</td>
<td>20W</td>
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<td>±0.004%</td>
<td>±0.004%</td>
<td>-F</td>
</tr>
<tr>
<td>1/4A24 250V</td>
<td>30W</td>
<td></td>
<td>±0.005%</td>
<td>±0.005%</td>
<td>-F</td>
</tr>
<tr>
<td>1/4A24 250V</td>
<td>30W</td>
<td></td>
<td>±0.005%</td>
<td>±0.005%</td>
<td>-F</td>
</tr>
<tr>
<td>1/2A12 500V</td>
<td>4W</td>
<td></td>
<td>±0.011%</td>
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<td>-F</td>
</tr>
<tr>
<td>1/2A24 500V</td>
<td>20W</td>
<td></td>
<td>±0.002%</td>
<td>±0.002%</td>
<td>-F</td>
</tr>
<tr>
<td>1/2A24 500V</td>
<td>30W</td>
<td></td>
<td>±0.002%</td>
<td>±0.002%</td>
<td>-F</td>
</tr>
</tbody>
</table>

---

**SHIELDING:**
All models are available with optional six-sided wrap-around Mu-Metal Shielding. This shielding attenuates magnetic and electrostatic emissions, while shielding ripple reduction circuitry from outside noise.

**MECHANICAL:**
The “F” Series accessories are designed to be added to the basic “A” Series HVPS modules. The combined plastic package has a footprint of only 7.0 In², a volume of just 6.3 In³ and a weight of 7oz. Mounting plates and brackets are available for chassis mounting. This series is also available in an RF tight metal PCB/chassis mount package. The combined metal package has a footprint of only 10.7 In² and a weight of 7oz.

**ENVIRONMENT:**
The “F” Series meets the same environmental specifications for temperature, shock and vibration as the “A” series. All units receive a 24-hour burn-in prior to final test. Extended temperature range is available along with other enhanced capabilities. Please contact the factory.

---

**Ordering Information**
- Ripple Stripper Input Filter
- Eared Chassis Mounting Plate
- Eased Chassis Mounting Plate
- RF Tight Aluminum Case
- High Voltage Output
- +5VDC Reference Output
- HV Ground Return
- HV Output
- Iout Monitor
- Positive Power Input
- Remote Adjust Input
- HV Ground Return
- Enable/Disable
- Signal Ground Return
- Input Power Ground Return
- Remote Adjust Input
- 50% Lower Than

---

**Example:**
1/2A12-P4-F-M-C

---

**“Making High Voltage Easier”**
Rev H 2000
CS 9002, Ronkonkoma, NY 11779-9002
### High Power "8C/10C/12C/15C" SERIES

#### HIGH VOLTAGE POWER SUPPLY

### Typical Characteristics:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Conditions</th>
<th>Models</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inputs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage Range</td>
<td>All Types</td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current, No Load, Max, Max, Current</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max Load, Extended Input Voltage</td>
<td>See Figure 8 High Voltage: C, Datasheet</td>
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</tr>
<tr>
<td><strong>Output</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage Range</td>
<td>Nominal input</td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>Nominal input, Max, Max</td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Capacitance</td>
<td>Maximum Voltage Range</td>
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<tr>
<td><strong>Output Voltage Monitor</strong></td>
<td>All Types</td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>Full Scale Range, Full Scale Range</td>
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</tr>
<tr>
<td>Proportionality</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Remote Programming</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Impedence</td>
<td>Nominal input</td>
<td></td>
</tr>
<tr>
<td>Adjust Resistance</td>
<td>Typical Potentiometer Values</td>
<td></td>
</tr>
<tr>
<td>Adjust Controls</td>
<td>Divided by 1000</td>
<td></td>
</tr>
<tr>
<td>Adjust Voltage</td>
<td>Reference to signal ground</td>
<td></td>
</tr>
<tr>
<td>Adjust Logic</td>
<td>0 to 15 VDC for 0 to 15 VDC Input</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td></td>
<td></td>
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<tr>
<td>Output Voltage</td>
<td>1% to 12% VDC</td>
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</tr>
<tr>
<td>Output Impedence</td>
<td>+5% to -15% VDC</td>
<td>82</td>
</tr>
<tr>
<td>Temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Enable</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Supply On</td>
<td>Full load or voltage in TDL High</td>
<td>-10 VDC</td>
</tr>
<tr>
<td>Power Supply Off</td>
<td>Grounded or voltage in TDL Low</td>
<td>0 to -0.0.022 VDC (Same TDL minimum)</td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating</td>
<td>Full load, Max, Max, Case Temp</td>
<td>-40 to +100 °C</td>
</tr>
<tr>
<td>Storage</td>
<td>Non-Operating, Case Temp</td>
<td>-55 to +155 °C</td>
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<tr>
<td>Process</td>
<td>One in Three Specified Temperature</td>
<td>+25 °C</td>
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<tr>
<td>Thermal Shock</td>
<td>MIL Std 882, Method 508, Class 2</td>
<td>-40 to +100 °C</td>
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<tr>
<td><strong>Altitude</strong></td>
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<tr>
<td>Operating</td>
<td>Standard Package</td>
<td></td>
</tr>
<tr>
<td>Non-operating</td>
<td>Standard Package</td>
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<tr>
<td><strong>Shock &amp; Vibration</strong></td>
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<tr>
<td>Shock</td>
<td>MIL-8852, Method 516, Proc. 4</td>
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<tr>
<td>Vibration</td>
<td>MIL-8852, Method 516, Proc. 516</td>
<td>30</td>
</tr>
<tr>
<td><strong>Packaging</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Outer construction</td>
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</tr>
<tr>
<td><strong>METAL CASE</strong></td>
<td>CONSTRUCTION:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Epoxy Filled Aluminum Box</td>
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</tr>
<tr>
<td></td>
<td>Chem Film per MIL-C-5541 Class 1A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TOLERANCE:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overall ±0.025&quot; Pin to Pin ±0.015&quot;</td>
<td></td>
</tr>
</tbody>
</table>

### Connections

#### Ordering Information

- **Type**: 8C, 10C, 12C, 15C
- **Input Power Ground Return**: 125 Watts Output
- **Output Monitor**: 60 Watts Output
- **Signal Ground Return**: 60 Watts Output
- **Remote Adjust Input**: 60 Watts Output
- **20 A ITO**: Positive Power Input
- **-N**: Negative Output
- **-P**: Positive Output
- **Power**: 24VDC Nominal
- **Polarity**: Positive Output
- **Heat Sinks**: 400°C (High to Hi-Lead)

**Example**: 8C24-P125
TRIPLE OUTPUT “AUX” SERIES
HIGH VOLTAGE POWER SUPPLY

GENERAL INFORMATION:
The “AUX” Series Accessory provides second and third adjustable positive HV outputs in addition to the adjustable main positive high voltage power supply output. The “AUX” outputs are set for a specific voltage range at the factory. One output is referred to as the Focus, one as the grid. The “AUX” is achieved by adding a daughter board inside the “10A to 35A” high voltage power supply. This “AUX” board is encapsulated with the main high voltage power supply in a special taller enclosure to accommodate the height of the adjust pots. Typical applications are: CRT Raster Display, X-Y CRT Display, E Beam Bias.

HIGH VOLTAGE “AUX” OUTPUTS:
The “AUX” outputs are non-isolated, positive, unipolar outputs. Full capability is available over an input range of 12 to 15Vdc ±10% for 4W units and 24 to 28Vdc ±5% for 15W/30W units. The Focus output voltage is fully functional when the main output is within the range specified on the ordering information table. The manufactured tolerance on the output voltage range provided is ±5%. Line regulation error is < 0.1%. Load regulation error is 0.5% per uA. The outputs have a temperature coefficient of +0.11% per °C. Each “AUX” output has a current capability of 0 to ±25uA, contact factory for higher current. Each “AUX” output can be adjusted using an internal single turn potentiometer. The potentiometer adjusts from a factory set voltage down to 450Vdc lower. Specific outputs available are:

- Standard TC: Compensated TC:
  - 300V: ±500V ± 2000PPM
  - 450V: ±650V ± 4000PPM
  - 600V: ±800V ± 5037PPM
  - 750V: ±950V ± 6289PPM
  - 900V: ±1100V ± 6900PPM
  - 1050V ± 1050PPM

The “AUX” Grid HV output is via pin #10 on an additional pair of standard .025” square IDC pins. These pins can be used for PCB mounting or direct wiring. The “AUX” Focus HV output is via an 18” long flying lead.

COMPATIBILITY:
The “AUX” series match the standard “10A to 35A” series for design methodology, remote control, enable/disable, reference, shock and vibration. Designed and built utilizing a state of the art power conversion topology, these units feature surface mount technology and encapsulation techniques providing high reliability and low cost. Base power supply output current rating remains at full value. Nominal input voltage should be used for maximum efficiency. Output current monitor is rescaled to accommodate the “AUX” current.

SHELILING:
All models are available with optional six-sided wrap-around Mu-Metal Shielding. This shielding attenuates magnetic and electrostatic emissions, while shielding ripple reduction circuitry from outside noise. The high voltage power supply dimensions change by only 0.010”.

PACKAGING:
Since the Auxiliary board is designed to fit inside of the “10A to 35A” footprint the width and length remain unchanged. To accommodate the adjust pots all 4W units are 1.175” x 1.87” x 0.400” (HxWxL). 4W units are 1.175” x 1.87” x 0.475” (HxWxL). 30W units are 1.625” x 2.375” x 0.625” (HxWxL). 25W units are 1.625” x 2.375” x 0.625” (HxWxL). As always, optional six-sided Mu-Metal shielding, chassis mounting brackets and mounting plates are available.

ENVIRONMENT:
The “AUX” Series meets the same environmental specifications for temperature, shock and vibration as the “10A to 35A” series. All units receive a 24-hour burn-in prior to final test. Extended temperature range is available along with other enhanced capabilities. Please contact the factory.