# 30A-40A SERIES

## 30kV to 40kV High Voltage Biasing Supplies

The 30A-40A Series of regulated, high-voltage DC-DC converters are an extension of the A Series, directly addressing the needs of the miniature PCB or chassis-mount ≥30kV application. 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. Typical applications for the 30A-40A Series include the following: electrostatic discharge testers, plasma, electrostatic, x-ray, and wire testers.

- 0 to 30kV, 35kV or 40kV output
- 4, 15 or 30 watts of output power
- Maximum Iout capability down to 0 Volts
- Wide input voltage range
- Indefinite output short-circuit protection
- Output current & voltage monitors
- Fixed-frequency, low-stored-energy design
- >400,000 hour MTBF @65°C
- UL/cUL Recognized Component; CE Mark (LVD & RoHS)

| PARAMETER | CONDITIONS | MODELS | | | | | | | | | UNITS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| INPUT | | 12V | | | | | 24V | | | | |
| Voltage Range | Full Power | + 11 to 16 | | | | | + 23 to 30 | | | | VDC |
| Voltage Range | Derated Power Range | + 9 to 32 | | | | | + 9 to 32 | | | | VDC |
| Current | Standby / Disable | < 30 | | | | | < 30 | | | | mA |
| Current | No Load, Max Eout | 30A < 0.25, 35A < 0.35, 40A < 0.38 | | | | | 30A < 0.30, 35A < 0.20, 40A < 0.38 | | | | A |
| Current | Max Load, Max Eout | ~ 800 | | | | | ~1800 | | | | mA |
| AC Ripple Current | Nominal Input, Full Load | < 80 | | | | | < 80 | | | | mA p-p |
| OUTPUT | | 30A | | | 35A | | | 40A | | | |
| Voltage Range | Nominal Input | 0 to 30,000 | | | 0 to 35,000 | | | 0 to 40,000 | | | VDC |
| Nominal Input Voltage / Model | | 12 | 24 | 24 | 12 | 24 | 24 | 12 | 24 | 24 | VDC |
| Power | Nominal Input, Max Eout | 4 | 15 | 30 | 4 | 15 | 30 | 4 | 15 | 30 | Watts |
| Current | Iout Entire Output Voltage Range | 0.13 | 0.50 | 1.0 | 0.11 | 0.42 | 0.86 | 0.10 | 0.37 | 0.75 | mA |
| Current Scale Factor | Full Load | .140 | .173 | .181 | .158 | .179 | .184 | .077 | .089 | .092 | mA/V |
| Voltage Monitor Scaling | | 1000:1 ± 2% into 10MΩ | | | | | | | | | - |
| Ripple | Full Load, Max Eout, 300pF bypass Cap. | 0.025 | 0.039 | 0.058 | 0.025 | 0.040 | 0.075 | 0.030 | 0.060 | 0.064 | %V p-p |
| Ripple with -F-M Option | Full Load, Max Eout, 300pF bypass Cap. | 0.021 | 0.028 | 0.048 | 0.016 | 0.034 | 0.040 | 0.007 | 0.025 | 0.053 | %V p-p |
| Dynamic Load Regulation | ½ to Full Load, Max Eout per 0.1mA | <10.0 | <10.0 | <10.0 | <10.0 | <10.0 | <10.0 | <10.0 | <10.0 | <10.0 | V pk |
| Line Regulation | Nom. Input, Max Eout, Full Power | < 0.01 % | | | | | | | | | VDC |
| Static Load Regulation | No Load to Full Load, Max Eout | < 0.01% | | | | | | | | | VDC |
| Stability | 30 Min. warmup, per 8 hr/ per day | < 0.01% / < 0.02% | | | | | | | | | VDC |
| PROGRAMMING & CONTROLS | | ALL TYPES | | | | | | | | | |
| Input Impedance | Nominal Input | + Output Models 1.1MΩ to GND, - Output Models 1.1MΩ to +5 Vref | | | | | | | | | MΩ |
| Adjust Resistance | Typical Potentiometer Values | 10K to 100K (Pot across Vref. & Signal GND, Wiper to Adjust) | | | | | | | | | Ω |
| Adjust Logic | 0 to +5 for +Out, +5 to 0 for - Out | +4.64 VDC for +Output or +0.36 for -Output = Nominal Eout | | | | | | | | | - |
| Output Voltage & Impedance | T=+25°C | + 5.00VDC ± 2%, Zout = 464Ω ± 1% | | | | | | | | | - |
| Enable/Disable | | 0 to +0.5 Disable, +2.4 to 32 Enable (Default = Enable) | | | | | | | | | VDC |
| ENVIRONMENTAL | | STANDARD | | | | | -25PPM | | | | |
| Operating | Full Load, Max Eout, Case Temp. | -40 to +65 | | | | | +10 to +45 | | | | °C |
| Coefficient | Over the Specified Temperature | ± 50 | | | | | ± 25 | | | | PPM/°C |
| Thermal Shock | Mil-Std 810, Method 503-4, Proc. II | -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 Vacuum (Vacuum may require -P2 option, contact factory for details.) | | | | | | | | | - |
| Shock | Mil-Std-810, Method 516.5, Proc. IV | 20 (Standard), 40 (-C Option) | | | | | | | | | G's |
| Vibration | Mil-Std-810, Method 514.5, Fig.514.5C-3 | 10 (Standard), 20 (-C Option) | | | | | | | | | G's |

Specifications subject to change without notice.



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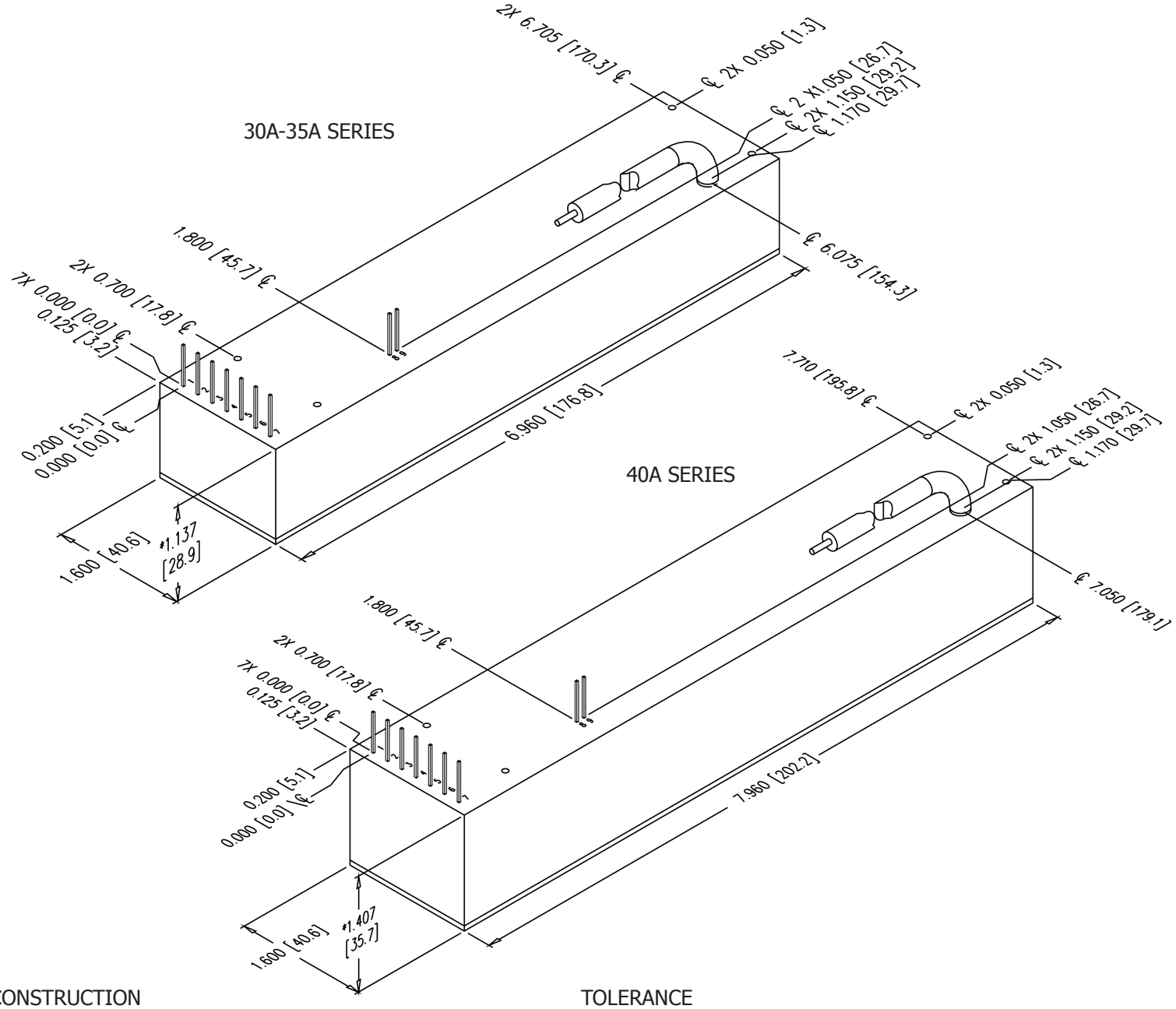


### CONSTRUCTION

Epoxy-filled DAP box certified to ASTM-D-5948 with -C Option:
Aluminum Alloy 5052-H32, Finish: MIL-A-8625 Type II (Anodizing)

### SIZE

Volume:
30A/35A: 12.66 in³ (207.46cc), w/-C Option 20.00 in³ (327.80cc)
40A: 17.92 in³ (293.66cc), w/-C Option 27.00 in³ (442.53cc)
Weight:
30A/35A: 15.00 oz (425.24g), w/-C Option 22.00 oz (623.69g)
40A: 21.00 oz (595.34g), w/-C Option 30.00 oz (850.49g)

### TOLERANCE

Overall ±0.050" (1.27)
Pin to Pin ±0.015" (0.38)
Mounting hole locations ±0.025" (0.64)

### NOTES

-M equipped units are an additional 0.030" (0.76) for each dimension.
Contact UV Customer Service for drawings of models equipped with -E , -C, or -H options.

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



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# 30A-40A SERIES

## 30kV to 40kV High Voltage Biasing Supplies

| CONNECTIONS | |
|---|---|
| PIN | FUNCTION |
| 1 | Input-Power Ground Return |
| 2 | Positive Power Input |
| 3 | Iout Monitor |
| 4 | Enable/Disable |
| 5 | Signal Ground Return |
| 6 | Remote Adjust Input |
| 7 | +5VDC Reference Output |
| 8 | HV Ground Return |
| 9 | Eout Monitor |

All grounds joined internally. Power-supply mounting points isolated from internal grounds by >100kΩ, .01uF / 50V (Max) on all models except -M (15W and above), -M-E, -M-C, and -M-H configurations which are 0Ω.

| ORDERING INFORMATION | | |
|---|---|---|
| Type | 0 to 30,000 VDC Output | 30A |
| | 0 to 35,000 VDC Output | 35A |
| | 0 to 40,000 VDC Output | 40A |
| Input | 12VDC Nominal (4W only) | 12 |
| | 24VDC Nominal (15W and 30W only) | 24 |
| Polarity | Positive Output | -P |
| | Negative Output | -N |
| Power | Watts Output (12 V Only) | 4 |
| | Watts Output (24 V Only) | 15 |
| | Watts Output (24 V Only) | 30 |
| Case | Plastic Case - Diallyl Phthalate | (Standard) |
| | 'Eared' Heatsink Plate (Plastic Case) | -E |
| | RF-Tight Aluminum Enclosure | -C |
| Heatsink | .400" High (sized to fit case) | -H |
| Shield | Six-sided Mu-Metal Shield | -M |
| Ripple Stripper® | Integral Output Filter (See -F Option Data Sheet) and Mu-Metal | -F -M |
| Lead Options | Shielded Flying Lead | -AS |
| | Protected Flying Lead | -AP |
| | Terminated Flying Lead (Contact Customer Service) | -ATxx |
| Temp. Coefficient | 25PPM Temperature Coefficient | -25PPM |

IEC-60950-1

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

Manufactured in USA

Example: 40A12-P4-C

Type: Voltage, Model, Input, Polarity, Power, Option (Case)

Popular accessories ordered with this product include CONN-KIT, BR-5 and BR-9 mounting bracket kits, and our full range of high voltage output connectors (see Accessories & Connectors datasheet).

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