Precision Regulated, Low Ripple, High Voltage Power Supplies

0 to +/-200V through 0 to +/-2000V @ 1 Watt
Ca Series PC or Chassis Mount

The CA Series of high performance, precision regulated, high voltage power supplies offers improved performance and added features. Improvements in stability and ripple, along with an on board precision reference, a voltage monitor and increased protection, enable these modules to replace much larger, more expensive power supplies in many applications. Each model is programmed from 0 to 100% of rated output via a DAC compatible high impedance programming input. A voltage monitor is provided and is internally buffered to provide a low impedance (up to 1 mA) signal to external circuitry. The precision, on board reference can be used in conjunction with an external potentiometer or voltage divider to program the high voltage output. Each unit has an accessible potentiometer allowing for individual calibration after installation. A quasi-sinewave oscillator, internal transformer shielding, and an isolated steel case reduce EMI/RFI radiation to extremely low levels. Suitable for photomultiplier tubes, avalanche photodiodes, precision EO lenses, piezo devices and other applications requiring precision, low noise, high voltage in a miniature, pc or chassis mount, cost effective package.

Applications
- Photomultiplier Tubes
- Avalanche Photodiodes
- Solid State Detectors
- Electrophoresis
- EO Lenses
- Piezo Devices
- Capacitor Charging

Electrical Specifications

Input voltage: +11.5 to +15.5V
5V input models: 4.75 to 5.25V
Input current:
- 12V input, no load, <80mA
- 12V input, full load, <220mA
- 5V input, no load, <65mA (CA02-CA12)
- 5V input, full load, <420mA (CA02-CA12)
- CA20x-5, no load, <165mA
- CA20x-5, full load, <550mA

Programming voltage:
- 0 to +2.048V ±1%, up to 1mA
- 0 to +2.048V ±25ppm/°C

Voltage monitor:
- +2.048V ±1%, up to 1mA
- 0 to +2.048V ±25ppm/°C

Reference output:
- +5V ±1%, up to 1mA
- +5V ±25ppm/°C

Linearity:
- <0.5% (15% to 100% Vout)

Temperature coefficient:
- <0.005%/hr

Stability:
- <0.005%/hr

Thermal shock limit:
- 1°C/10 sec.

Standby power:
- <25mW

Operating temp.:
- -10°C to +50°C

Storage temp.:
- -25°C to +95°C

Options
- RoHS Compliant: i.e. CA02PR
- Extended operating temp: (-55°C to +70°C) see drawing
- Low out-gassing epoxy Consult factory for model number.
- UL V0 Rated epoxy Consult factory for model number.

*Notes
1. Specifications after 1 hour warm-up, full load, +25°C unless otherwise noted.
2. On negative output models, voltage monitor output is a buffered representation of the programming voltage.
3. Typical performance.
4. At maximum rated output voltage

Electrical Specifications:

<table>
<thead>
<tr>
<th>Model</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Regulation</th>
<th>Ripple</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA02P</td>
<td>0 to +200V</td>
<td>0 to 5mA</td>
<td>&lt;0.01%</td>
<td>&lt;0.05%</td>
</tr>
<tr>
<td>CA02N</td>
<td>0 to -200V</td>
<td>0 to 5mA</td>
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<tr>
<td>CA05P</td>
<td>0 to +500V</td>
<td>0 to 2mA</td>
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5 VDC Input Models:

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Contact information:
- Website: web www.emcohighvoltage.com
- Phone: (209) 267-1630
- Fax: (209) 267-0282
- 70 Forest Products Road, Sutter Creek, CA USA 95685
- E-mail: sales@emcohighvoltage.com

We reserve the right to make changes without notification.
CA SERIES

Operating Temp. –10 to +50°C

PHYSICAL CHARACTERISTICS
SIZE: 1.75 x 1.10 x 0.50 (44.45 x 27.94 x 12.70)mm
WEIGHT: 1.4 oz. (40.0 Grams)
CASE MATERIAL: Zinc Plated Steel
PINS: 0.04 (1.02mm) Diameter, 0.20 (5.08mm) Long

Dimensions are in inches
Dimensional Tolerances: ± 0.03 (.76mm)
(Metric equivalents in parenthesis)

Notes:
1: All grounds internally connected, except case.
2: There should not be more than 50 volts potential between the case ground (pin 5) and the circuit ground (pins 3 and 8).

CA-T SERIES
Extended Operating Temp. –55 to +70°C

Model # add (–T) ie
1: CA20P-T
2: CA20P-5T

PHYSICAL CHARACTERISTICS
SIZE: 1.80 x 1.12 x 0.51 (45.72 x 28.45 x 12.70)mm
WEIGHT: 1.4 oz. (40.0 Grams)
CASE MATERIAL: Aluminum
PINS: 0.04 (1.02mm) Diameter, 0.20 (5.08mm) Long

Dimensions are in inches
Dimensional Tolerances: ± 0.03 (.76mm)
(Metric equivalents in parenthesis)
**CA Series Chassis Mount Kit**

**CA SERIES CHASSIS MOUNT KIT**
**MODEL CM1**

**FITS ALL CA SERIES MODELS**

This Chassis Mount Kit provides a convenient package to use any CA Series precision high voltage power supply without having to fit it onto a PC board. The Kit also provides for easy prototyping and evaluation. Extra filtering on the input and output improves performance. A schottky diode on the input provides reverse polarity protection. Input connector is via a 15P SUB MIN-D plug (mate supplied) and output is via an MHV style coaxial connector (mate supplied).

**APPLICATIONS:**
- Chassis mounting for the CA Series High Voltage Power Supplies
- Easy Prototyping and Evaluation

**FEATURES**
- Open Frame Design
- On Board Potentiometer for easy control
- Remote Control Capabilities

**PROGRAMMING OPTIONS / INSTRUCTIONS**
1. Onboard Potentiometer: connect pins 7 to 4 and 8 to 3, turn potentiometer to adjust high voltage.
2. Remote Potentiometer: connect wiper arm to pin 3, other sides to pins 4 and 2.
3. Remote Analog Signal: apply 0 to +5v to pin 3, return to pin 2.

**PHYSICAL SPECIFICATION:**
SIZE: 4.26 x 1.75 x 1.33 (108.20 x 44.45 x 33.78)

**ORDERING INFORMATION:**
Please note when ordering a CA Series Chassis Mount Kit the CA Module is not included and must be ordered separately.

Dimensions are in inches
Dimensional Tolerances: ± .03 (.76mm)
(Metric equivalents in parenthesis)

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