



Model 2000/2100 Bin/Power Supply

Features

- NIM standard, IEC 801 compliant
- 150 W capability (96 W for Model 2000)
- 90-130 V or 193-260 V operation
- ± 12 V at 3 A, ± 24 V at 1.5 A, ± 6 V at 10 A*

* ± 6 V supply provided only on the Model 2100.

Description

The CANBERRA Models 2000 and 2100 Bin/Power Supplies provide mounting space and power sources for up to 12 standard Nuclear Instrument Modules (NIM) conforming to DOE/ER-0457T. Multiple



width NIM modules are also accommodated in any combination up to a total of 12 single widths. Modern circuit design and thermal management allow a high level of performance to be delivered in an adjustment-free, low-profile package that allows easy access to the NIM rear panels.

Connectors for each module position provide the standard NIM power supply voltages of $\pm 6^*$, ± 12 and ± 24 V dc, and 117 V ac. Up to 150 W of total dc power is available to a balanced load at ambient temperatures up to 50 °C, with derating up to 60 °C. The power supply is EMI filtered, short-circuit proof, thermally protected, tightly regulated and exceptionally stable. It includes over-voltage protection for the ± 6 V supplies*. In addition, the ac inrush current is controlled to reduce transients in sensitive systems as well as to enhance reliability.

The control panel includes an on/off switch, a power monitor lamp, voltage test points and a temperature warning lamp which indicates temperatures approaching the design limit of the power supply.

The Bin is preconfigured at the factory for the standard line power of the destination country. However, an externally accessible line-entry module facilitates selection of 100, 120, 230 or 240 V ac nominal input power.

Specifications

INPUT

- 90-113 V, 103-130 V, 193-243 V or 206-260 V (externally selectable); 47-63 Hz, 400 VA. EMI filtered per IEC 801. Overvoltage category: II; Pollution degree: 2.

OUTPUTS

- REGULATED DC – 150 W balanced (72 W for Model 2000), 130 W unbalanced as follows:
 - ± 6 V dc at 0–10 A; total 10 A*
 - ± 12 V dc at 0–3 A; total of both, 4 A
 - ± 24 V dc at 0–1.5 A; total of both, 2 A
- Loads may be floated between any positive and any negative supply at currents up to that of the lower rated supply. All dc outputs are available simultaneously at maximum indicated current up to power limits up to 50 °C ambient. Total output power is derated 3%/°C up to 60 °C.
- UNREGULATED AC – 117 V nominal, 0.5 A maximum.
- TEST POINTS – The regulated voltages (ESD protected per IEC 801) and power ground are brought out to front panel jacks for test purposes.

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CONTROLS

- **THERMAL OVERLOAD** – Internal switch disables input power when the temperature limit is exceeded (automatic recovery). A warning light indicates the approach of thermal shutdown.
- **ON/OFF** – Front-panel switch controls line power; a pilot light signals power ON condition.

PERFORMANCE

- **REGULATION** – Load variations of 0 to 100% and/or line variations over the defined input ranges will cause a dc output voltage change (measured at test points) of 0.05% or less.
- **TIME/TEMPERATURE STABILITY** – After a 60-minute warmup at constant ambient temperature, the dc output voltages will not vary more than 0.05% during any 24-hour period. The temperature coefficient is less than $\pm 0.01\%$ (± 100 ppm)/ $^{\circ}\text{C}$ over the 0-60 $^{\circ}\text{C}$ ambient temperature range. In addition, the dc output voltages will remain within 0.1% of nominal over the entire range.
- **TRANSIENT RESPONSE TIME** – 100 μs for recovery to within 0.1% (1% for ± 6 V*) of the steady-state voltage for any line change within the defined ranges or a 10%-100% load change.
- **NOISE AND RIPPLE** – < 3 mV peak to peak (50 MHz bandwidth).
- **OVERLOAD PROTECTION** – Electronic protection for overloads exceeding the maximum current ratings (automatic recovery). Each supply has at least 0.2 A of headroom.
- **OVERVOLTAGE PROTECTION** – Electronic protection prevents ± 6 V* outputs from exceeding ± 7.5 V. In the event of an overvoltage condition, the respective supply is returned to ground through an SCR.
- **SIGNAL INTEGRITY** – The ac input is EMI filtered per IEC 801. The chassis forms an integral electrostatic shield. Removable panels are secured by screws spaced no more than 7.6 cm (3 in.) apart. Ventilating holes are less than 4 mm (0.16 in.) in diameter. Chassis bonding impedance is less than 0.01 ohm.

CONNECTORS

- **AC INPUT** – VDE-approved IEC 320 connector for detachable 3-wire power cords.
- **BIN CONNECTORS** – Twelve female connector blocks per DOE/ER-0457T.
- **TEST POINTS** – Pin jacks for dc voltages and ground accept common voltmeter probes.

PHYSICAL

- **DIMENSIONS (H x W x D)** – 21.9 x 48.3 x 51.1 cm (8.7 x 19 x 20.2 in.).
- **NET WEIGHT** – 9 kg (19 lb).
- **SHIPPING WEIGHT** – 13 kg (29 lb).

ENVIRONMENTAL

- **TEMPERATURE** – 0-50 $^{\circ}\text{C}$ (0-60 $^{\circ}\text{C}$ with derating).
- **HUMIDITY** – 80% max. R.H. up to 31 $^{\circ}\text{C}$, decreasing linearly to 50% R.H. at 40 $^{\circ}\text{C}$.
- **ALTITUDE** – To be used under 2000 m (consult factory for higher altitudes).

ORDERING INFORMATION

- 2000-1 BIN power supply configured for 110 V ac nominal line voltage.
- 2000-2 BIN power supply configured for 220 V ac nominal line voltage.
- 2100-1 BIN power supply (with ± 6 V) configured for 110 V ac nominal line voltage.
- 2100-2 BIN power supply (with ± 6 V) configured for 220 V ac nominal line voltage.

Note 1: When ordering the 220 V ac configuration the line entry module is configured for 240 V which allows use over a voltage range of 206 to 260 V.

Note 2: When ordering the 110 V ac configuration the line entry module is configured for 120 V which allows use over a voltage range of 103 to 130 V.

Note 3: For Japan end use 2000-1 or 2100-1 should be ordered. These Bin/Supplies will then be configured with line entry module selection of 100 V. This allows use over a voltage range of 90 to 113 V.

