

Computer Power Supply

Christian Roving A/S Power Division

CRP 4051A

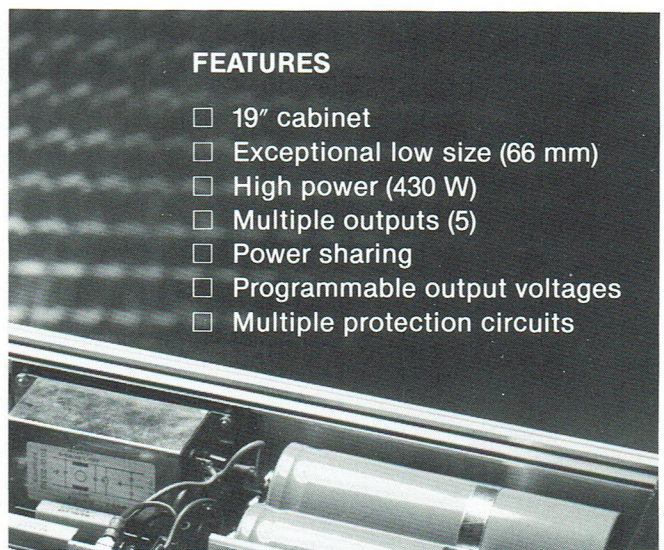
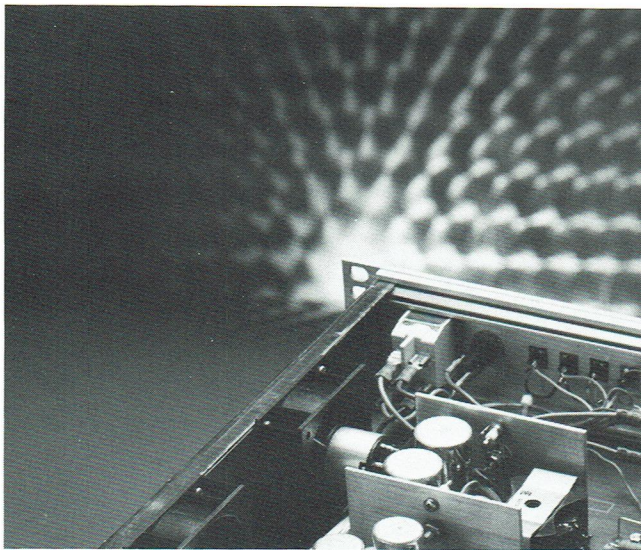
The CRP 4051A has been designed to cover all the power conversions requirements needed in a computer system.

As a result the CRP 4051A contains 3 power supplies.

A high performance, high power supply for the general processing circuit.

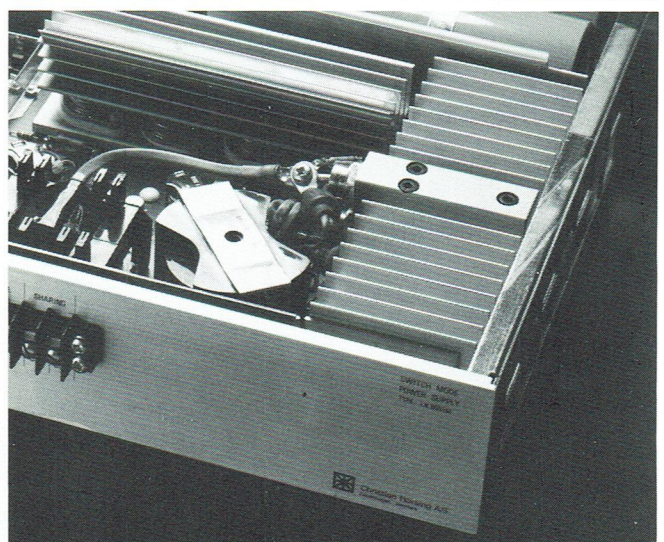
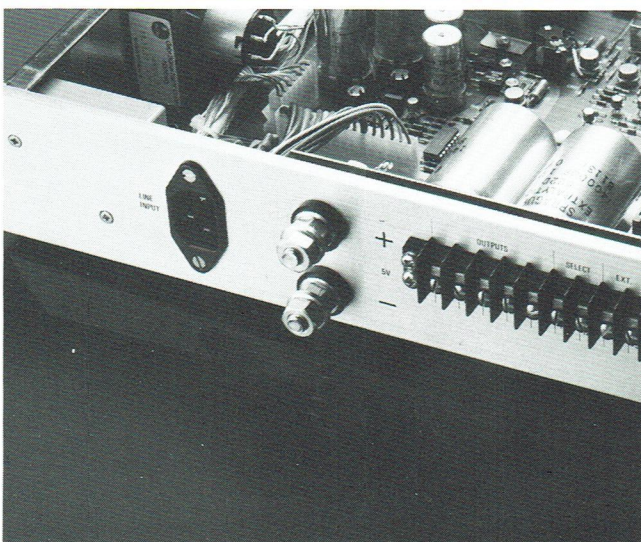
A dual voltage, medium power supply for the analogue circuit and some memory logic.

A dual voltage, low power supply for the interfacing circuit.



FEATURES

- 19" cabinet
- Exceptional low size (66 mm)
- High power (430 W)
- Multiple outputs (5)
- Power sharing
- Programmable output voltages
- Multiple protection circuits



CRP 4051A Features

- 19" rack cabinet
- Exceptional low size 1½ U (66 mm)
- High power (min. 430 W)
- 5 output voltages
 - + 5.2 V/60 A
 - + 12.4 V/ 4 A
 - 12.4 V/ 4 A
 - + 24 V/ ,1 A
 - 24 V/ ,1 A
- Power sharing when operated in parallel
- In rush current limiting
- Turn-on sequence control
- Low line (brown out) operation
- Undervoltage shutdown
- Over voltage protection
- Power limiting
- Current limiting
- Meets relevant EMI requirements
- 48 hours high temperature burn-in
- Remote sensing
- Programmable output voltages
- Forced air cooling
- LED indication on all outputs

Protection

- Input fuse: 5 A @ 220 VAC
10 A @ 110 VAC
- Inrush current: Less than 25 A peak
- Undervoltage: The converter will shutdown if the line voltage drops below nominal -25%.
The converter automatically resumes normal operation, when line voltage returns to specified operating range.

Technology

The CRP 4051A is based on the unique PAM - Pulse Amplitude Modulation - technique (patend) which combines the advantages of a very simple and reliable control circuit with the performance of modulation directly on the actual current waveform.

The result is: -

- inherent power and current limiting of each converter
- inherent power sharing when operated in parallel
- fast transient response
- low component count

The CRP 4051A has no restriction on number of units to be paralleled and the power supplies will automatically operate in power sharing mode and equally share the total power.

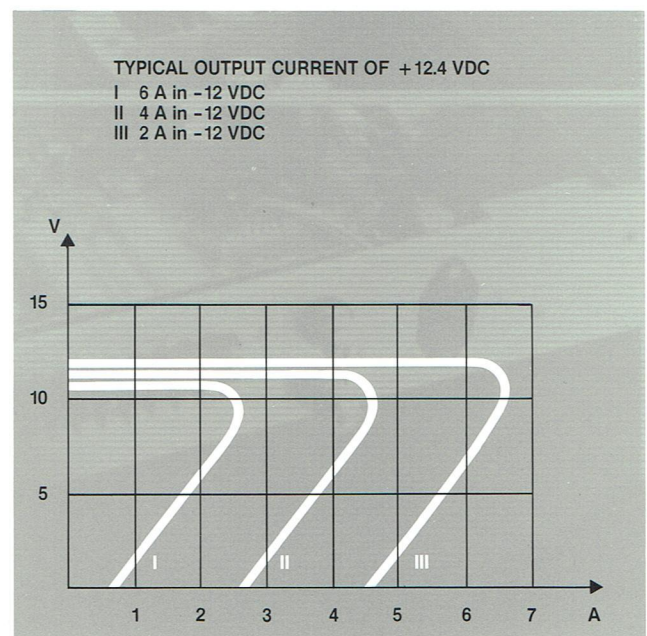
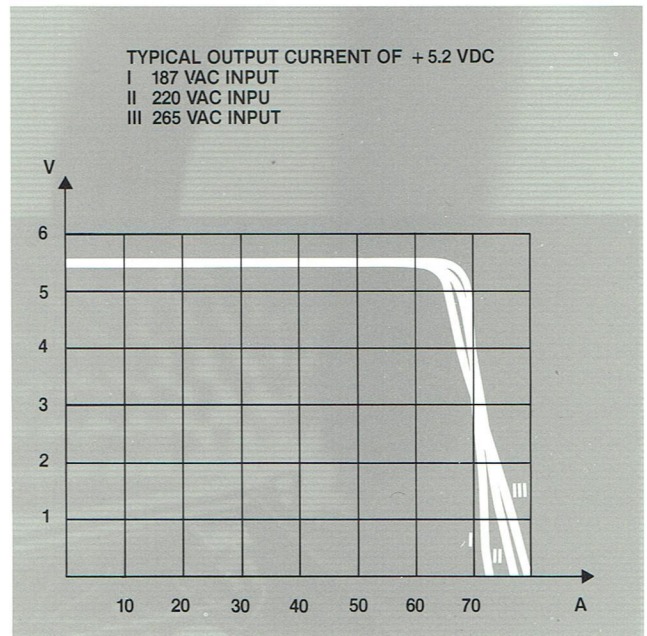
Input specification

Voltage

220 VAC (187-265 V)
110 VAC (94-132 V)
Voltage range is internally selectable
Single phase

Frequency

47-63 Hz



Output specification

Voltage/current

- + 5.2 VDC $\pm 2\%$ /60 A
- + 12.4 VDC $\pm 2\%$ / 4 A
- 12.4 VDC $\pm 2\%$ / 4 A
- + 24 VDC $\pm 5\%$ / .1 A
- 24 VDC $\pm 5\%$ / .1 A

Output power

430 W minimum

Efficiency

77% at full load

Load regulation

- 0.01% for + 5.2 VDC
- 0.01% for ± 12.4 VDC
- 0.5 % for ± 24 VDC

Line regulation

- 0.01% for + 5.2 VDC
- 0.01% for ± 12.4 VDC
- 0.01% for ± 24 VDC

Ripple

(F < 50 MHZ)

- 100 mVpp on + 5.2 VDC
- 15 mVrms on + 5.2 VDC
- 25 mVpp on ± 12.4 VDC
- 5 mVrms on ± 12.4 VDC
- 15 mVpp on ± 24 VDC
- 5 mVrms on ± 24 VDC

Cross regulation

Primary supply (5.2 VDC), secondary ± 12.4 VDC and auxiliary supply ± 24 VDC has independent regulators. Thus a load change on one supply has no impact on the others.

Only an asymmetric load change on the secondary supply will cause a slight change (less than .5% for 25% asymmetric load change).

Symmetric load change has no impact on output.

Transient Response

The voltage transient on the outputs of ± 12.4 VDC and ± 24 VDC is less than 1% of nominal voltage for load changes between full load and half load. The voltage transient on the outputs of + 5.2 VDC is less than 200 mV for load changes between full load and half load.

Overvoltage Protection

- 6.5 V $\pm .15$ V on + 5.2 VDC
- 15.0 V $\pm .5$ V on ± 12.4 VDC

Remote sense

+5.2 VDC has remote sensing through the rear connector.

Power sharing

Two control lines is accessible on the rear connector.

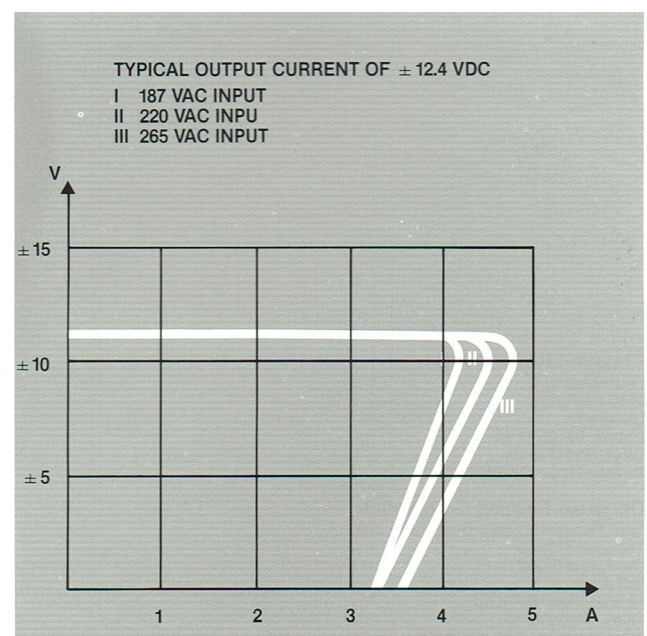
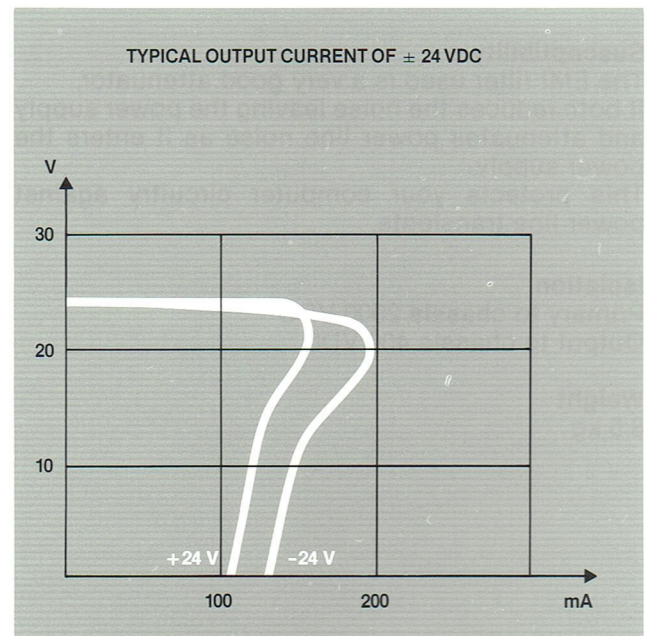
CS1 for the ± 12.4 VDC group. CS2 for the + 5.2 VDC group.

To obtain power sharing just interconnect the control terminals on relevant units.

Computer application

As the ± 12.4 VDC in general is the supply for interfacing and memory circuit the + 5.2 VDC is designed to shut down when the ± 12.4 VDC is missing to prevent the general processor from operating.

At power up the + 5.2 VDC is delayed until the ± 12.4 VDC is present.



General specification

Hold time

Outputs stays within regulation for 60 ms from last peak of line voltage cycle before input power is removed.

(Measured at full load and nominal input and output voltages).

This guarantees sufficient energy storage during a missing cycle in the power line.

Temperature range

0-55°C at 100% load.

Temperature stability

100 ppm/°C

Conducted EMI

Meets VDE & FCC requirements.

Radiated EMI

Meets VDE & FCC requirements.

Susceptibility

The EMI filter used is a very good attenuator. It both reduces the noise leaving the power supply and attenuates power line noise as it enters the power supply.

This protects your computer circuitry against power line transients.

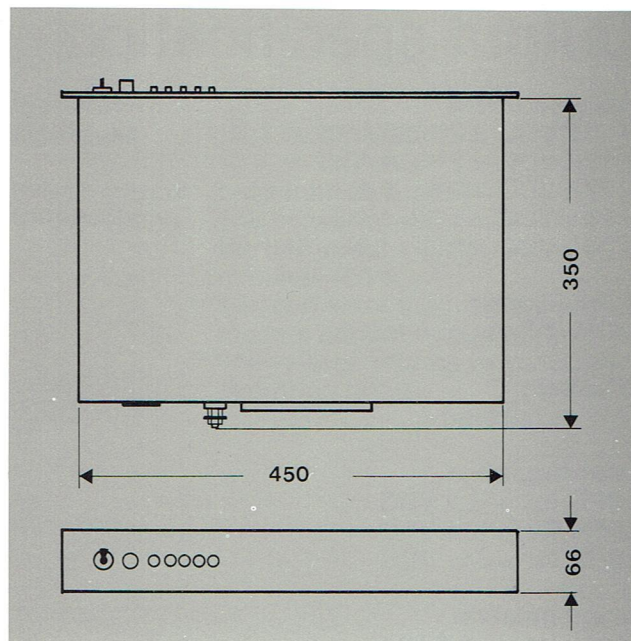
Isolation

Primary to chassis 2000 VDC

Output to chassis 400 VDC

Weight

8.5 kg



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