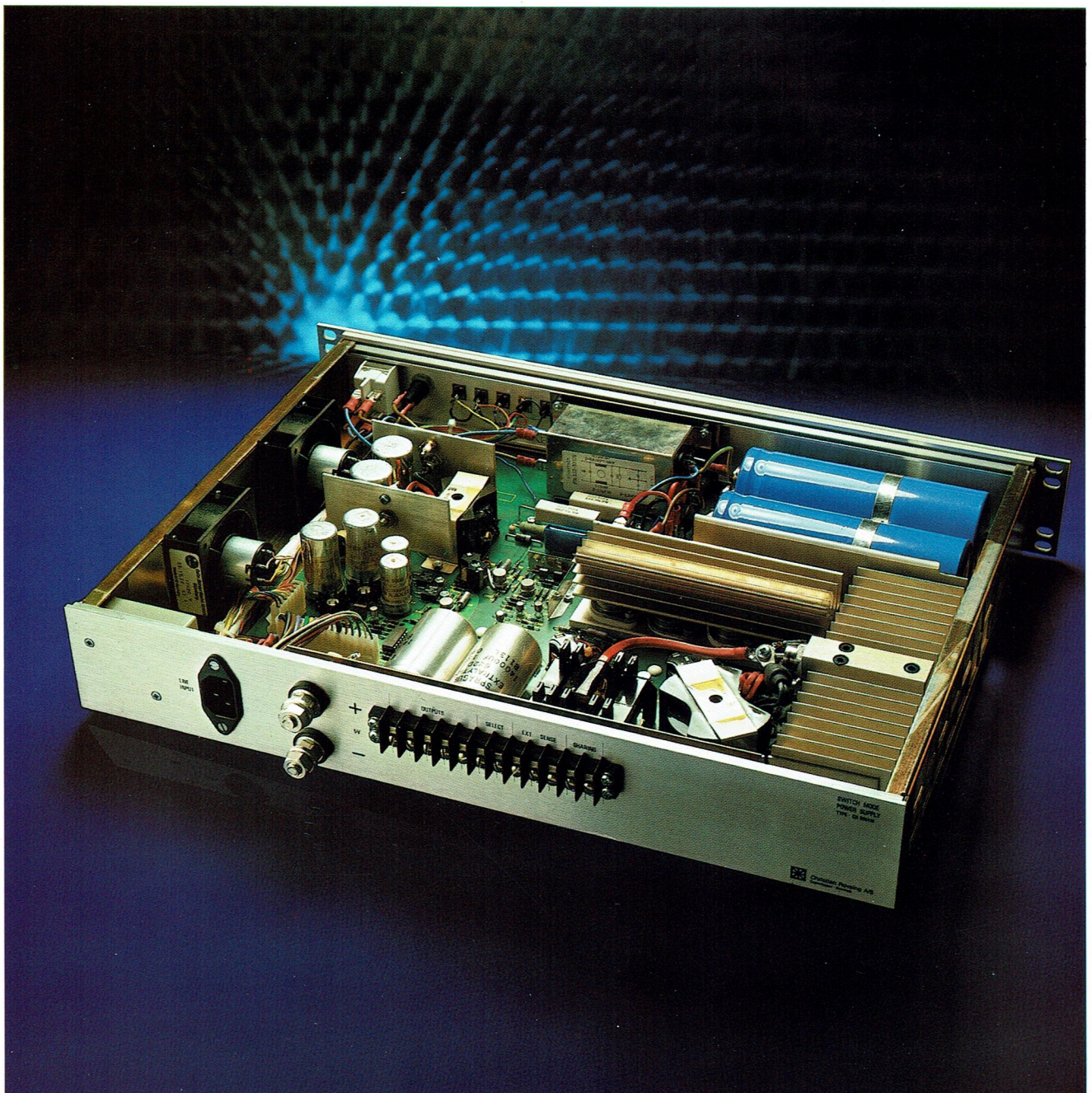


# Computer Power Supply

Christian Rovsing A/S Power Division

## CRP 4051A

- a high current supply for the logic circuitry.
- a dual voltage medium power supply for the analogue circuits and memories.
- a dual voltage, low power supply for the interfaces.



# CRP 4051A Specifications

## Input

### Voltage

220 VAC (187-265 V)  
110 VAC ( 94-132 V)  
Internal selection Voltage range.  
Single phase

### Frequency

47-63 Hz

### Protection

Input fuse: 5 A @ 220 VAC  
10 A @ 110 VAC  
Inrush current: Less than 25 A peak

Undervoltage: The converter will shut down if the line voltage drops below nominal -25%.  
The converter automatically resumes normal operation, when line voltage returns to specified operating range.

### Ripple

(F < 50 MHz)  
100 mVpp on + 5 VDC  
15 mVrms on + 5 VDC  
25 mVpp on  $\pm$  12 VDC  
5 mVrms on  $\pm$  12 VDC  
15 mVpp on  $\pm$  24 VDC  
5 mVrms on  $\pm$  24 VDC

### Cross regulation

Primary supply (5 VDC), secondary  $\pm$  12 VDC and auxiliary supply  $\pm$  24 VDC have independent regulators. Load change on one supply has no influence 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 influence on output.

### Transient Response

The voltage transient on the outputs of  $\pm$  12 VDC and  $\pm$  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 + 5VDC is less than 200 mV for load changes between full load and half load.

### Overvoltage Protection

6.5 V  $\pm$  .15 V on + 5 VDC  
15.0 V  $\pm$  .5 V on  $\pm$  12 VDC

### Remote sense

+ 5 VDC has remote sensing through the rear connector.

### Computer application

As the  $\pm$  12 VDC in general is the supply for interfacing and memory circuit, the + 5 VDC is designed to shut down when the  $\pm$  12 VDC is distributed in order to prevent the general processor from operating.  
At power up the + 5 VDC is delayed until the  $\pm$  12 VDC is present.

## Output

### Voltage/current

+ 5 VDC  $\pm$  2%/60 A  
+ 12 VDC  $\pm$  2%/ 4 A  
 $\div$  12 VDC  $\pm$  2%/ 4 A  
+ 24 VDC  $\pm$  5%/ .1 A  
 $\div$  24 VDC  $\pm$  5%/ .1 A

### Output power

430 W minimum

### Efficiency

77% at full load

### Load regulation

0.01% for + 5 VDC  
0.01% for  $\pm$  12 VDC  
0.5 % for  $\pm$  24 VDC

### Line regulation

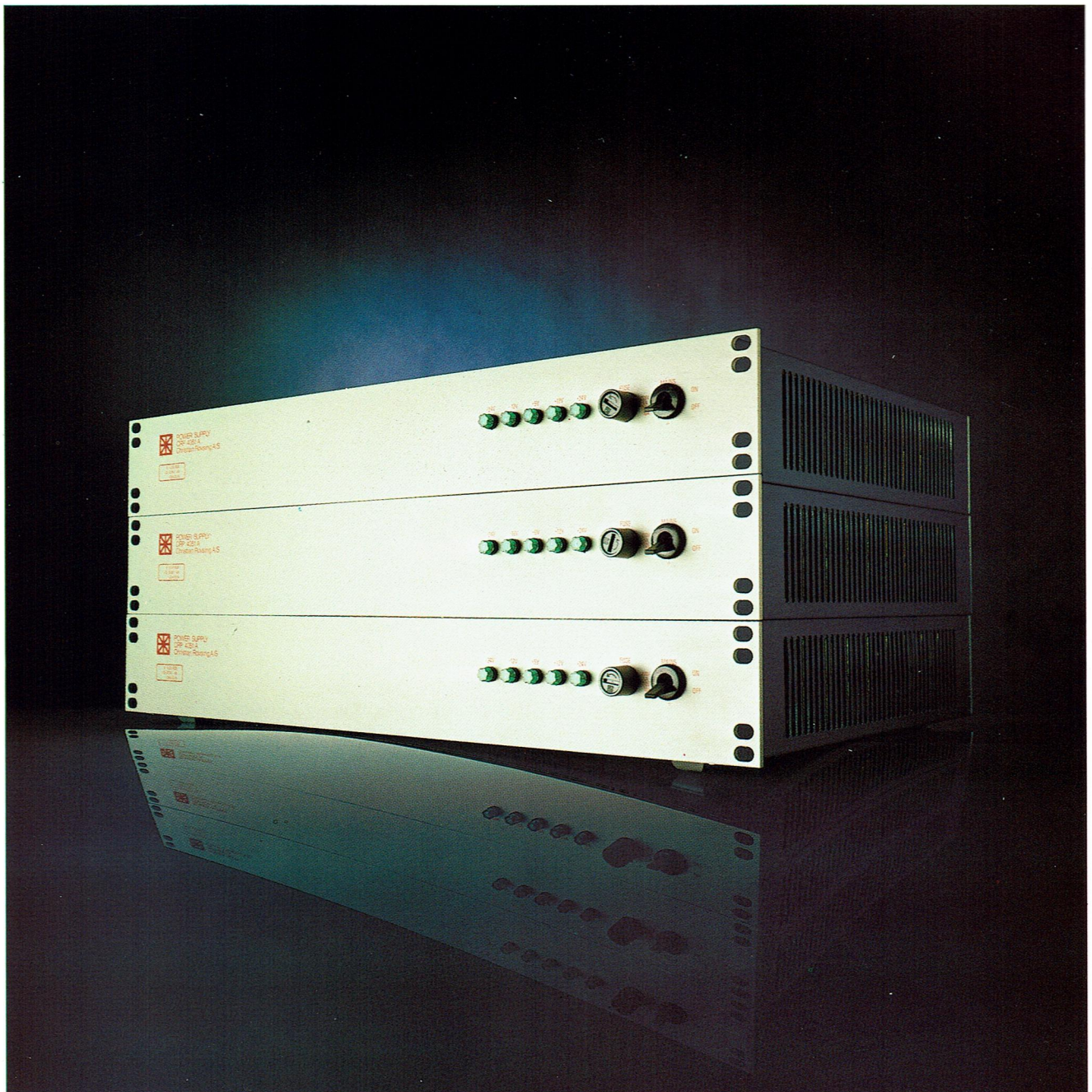
0.01% for + 5 VDC  
0.01% for  $\pm$  12 VDC  
0.01% for  $\pm$  24 VDC

# Technology

The CRP 4051A is based on the unique PAM - Pulse Amplitude Modulation - technique (patented) 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: -**

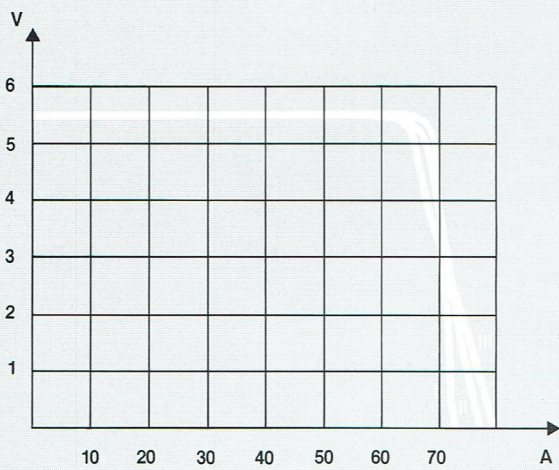
- inherent power and current limiting of each converter
- inherent power sharing when operated in parallel
- fast transient response
- low component count



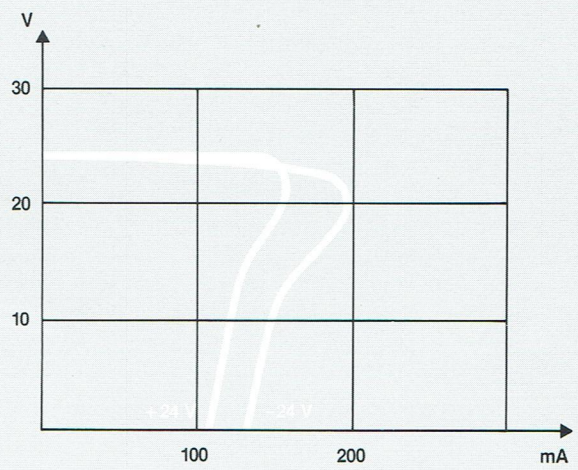
# Typical Graph.

TYPICAL OUTPUT CURRENT OF +5.2 VDC

- I 187 VAC INPUT
- II 220 VAC INPUT
- III 265 VAC INPUT

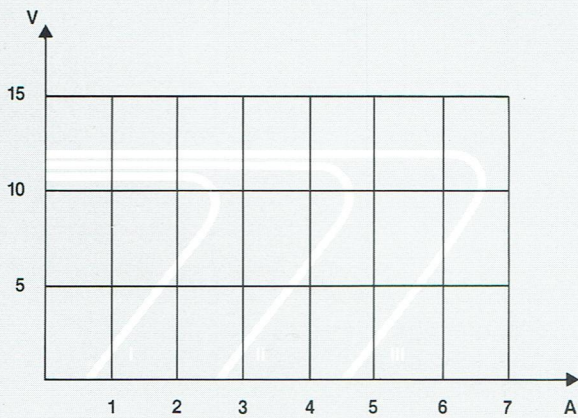


TYPICAL OUTPUT CURRENT OF  $\pm 24$  VDC



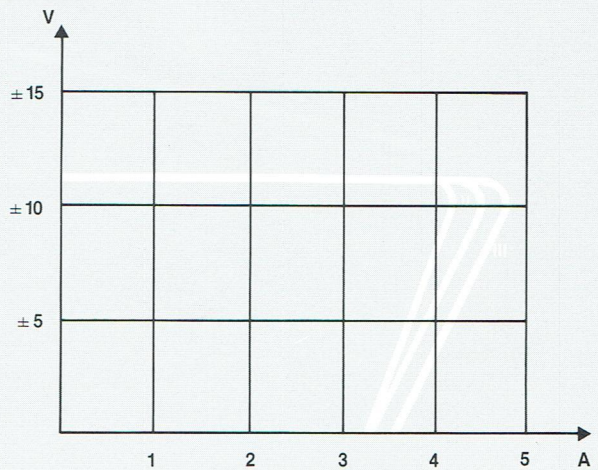
TYPICAL OUTPUT CURRENT OF +12.4 VDC

- I 6 A in -12 VDC
- II 4 A in -12 VDC
- III 2 A in -12 VDC



TYPICAL OUTPUT CURRENT OF  $\pm 12.4$  VDC

- I 187 VAC INPUT
- II 220 VAC INPUT
- III 265 VAC INPUT



# General specifications

## Hold time

Output 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.

## Power sharing

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 share the total power equally.

Two control lines are accessible on the rear connector.

CS1 for the  $\pm 12$  VDC group. CS2 for the + 5 VDC group.

## 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 an excellent attenuator and functions dually to reduce the noise leaving the power supply and to attenuate power line noise to the power supply.

This protects your computer circuitry against power line transients.

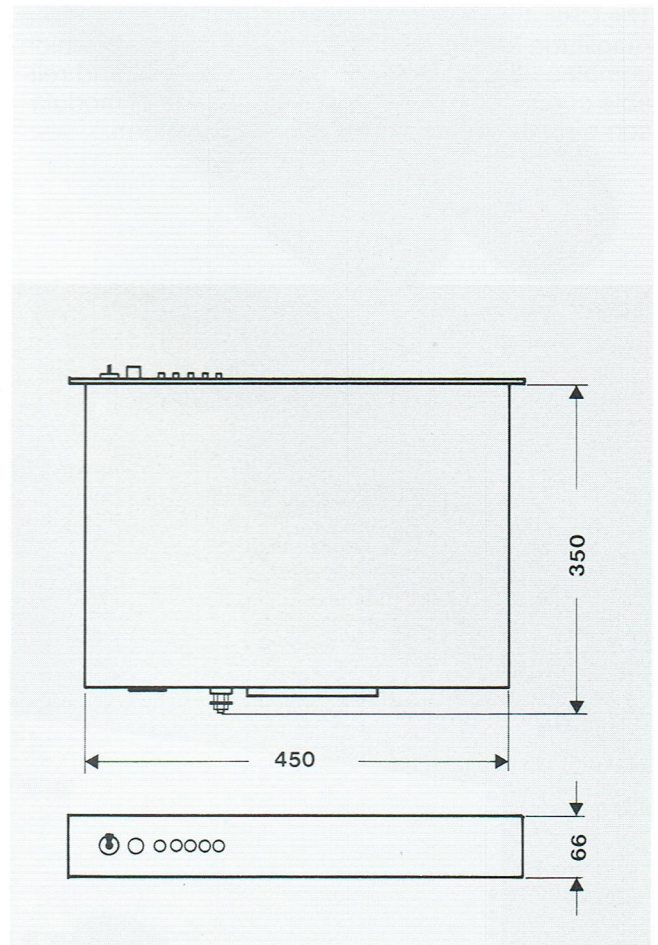
## Isolation

Primary to chassis 2000 VDC

Output to chassis 400 VDC

## Weight

8.5 kg



## Features

- 19" rack cabinet
- Exceptionally low size 1½ U (66 mm)
- High power (min. 430 W)
- 5 output voltages
- Power sharing when operated in parallel
- Inrush current limiting
- Turn-on sequence control
- Low line (brown out) operation
- Undervoltage shutdown
- Overvoltage protection
- Power limiting
- Current limiting
- Meets relevant EMI requirements
- 48 hours high temperature burn-in
- Remote sensing
- Programmable output voltages
- Forced air cooling built in
- LED indication on all outputs

# Christian Rovsing A/S



Power Systems Department in Herlev

For many years, Christian Rovsing A/S has demonstrated exceptional professional talent in the field of computer related power distribution. Efforts have been dedicated to the design and production of Switching Power Supplies to meet specific customer requirements from space and military standards to high-volume office automation.

Christian Rovsing A/S believes that by applying state of art technology and detailed understanding of computer systems requirements, it can deliver products with a uniquely long technological life time.

The exceptionally low component count makes the products extremely reliable and highly price competitive in high volume.

Several patents relating to power circuit design are held by the company.

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Our products are under continuous research and development. Therefore, any information may change without prior notice.