

# **CPCI Power Supply Manual**

## **PRODUCT DOCUMENTATION**

### **PD09 CP6-SVE-M270AC**

Reference ID: 24139 PD09

Revision: 01

Issued: February 01, 2002



The product described in this manual is in compliance with all applied CE standards.



## Revision History

Manual/Product Title:		CPCI Power Supply Manual: Product Documentation: CP6-SVE-M270AC	
Reference ID:		24139 PD09	
Rev. Index	Brief Description of Changes		Date of Issue
01	Initial Issue		Feb. 01, 2002

## Imprint

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### **DISCLAIMER:**

PEP Modular Computers GmbH rejects any liability for the correctness and completeness of this manual as well as its suitability for any particular purpose.

This manual was realized by: **TPD/Engineering, PEP Modular Computers GmbH.**



## 1. Introduction

The specific product description provided with this product documentation is part of the PEP's CPCI Power Supply manual. For further information, in particular regarding general details as well as safety and warranty statements, refer to the CPCI Power Supply Manual, ID 24139.

## 2. 270W M-Type Power Supply Unit

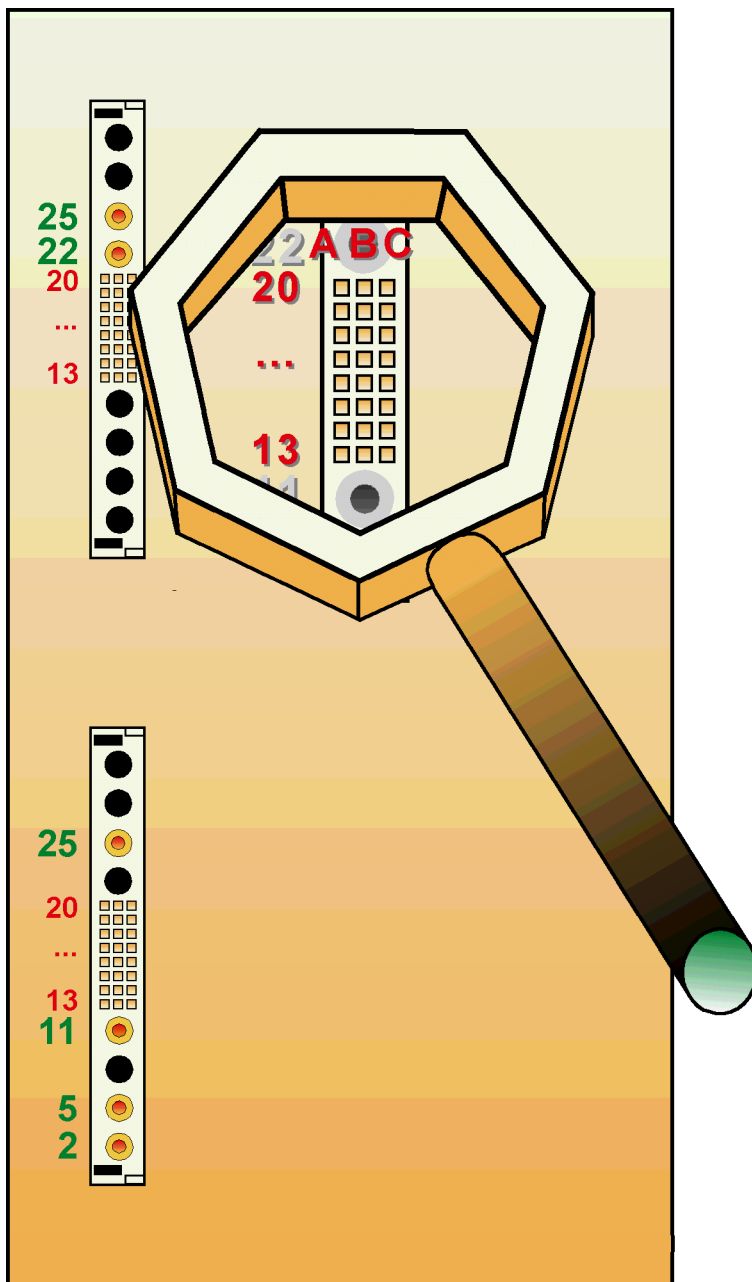
The main features of the 6U M-type, 120V/230V input, 270W output AC/DC power supply unit CP6-SVE-M270AC are described in the following table:

**Table 1: Distinctive Features of Power Supply Unit CP6-SVE-M270AC**

Feature	Specification
Form Factor	6U
Frontpanel Size	60.96* 266.7 mm
Mechanics	19" rack
Plug-In Compatibility	Yes
Power Supply Connector	DIN M24/8 connector
Input Voltage	$V_{US} = 99V..138V$ AC $V_{EU} = 187V..264V$ AC Frequency: 50Hz..60Hz
Output Power	270W
Output Voltages/Currents	$V_{01} = +3.3V$ at 30A $V_{02} = +5.1V$ at 20A $V_{03} = +12V$ at 4A $V_{04} = -12V$ at 2A
Cooling	Free convection
Redundant Supply Capability	—
Status Indication	Separate LEDs for $V_{01}..V_{04}$
Special Feature(s)	—



## 2.1 Power Supply Connectors



**Figure 1: Orientation of the DIN M24/8 Power Supply Connectors**

The  $V_{EU}$  and  $V_{US}$  input voltages to the power supply unit and the  $Vo1...Vo4$  output voltages from the power supply unit to the backplane are connected via two 32-pole DIN 24/8 male power supply connector.

For the pinouts of the DIN M24/8 power supply connectors please refer to the following table.



Table 2: DIN M24/8 Connector Pinouts

Pin	Function	Pin	Function
2	L1 (live connection)*	B.17	+3.3VL
5	N (neutral)*	B.18	+3.3VL
11	PE (earth protection)*	B.19	+12VL**
A.13	INT (internally connected)	B.20	-12VL**
A.14	INH*	C.13	EN
A.15	INT (internally connected)	C.14	DEG
A.16	OVF	C.15	INT (internally connected)
A.17	+5VF	C.16	+3.3VL
A.18	+3.3VL	C.17	+3.3VL
A.19	+12VL**	C.18	+3.3VL
A.20	-12VL**	C.19	+12VL**
B.13	+3.3VL	C.20	-12VL**
B.14	+3.3VL	22	+5VL**
B.15	+3.3VL	25	OVL
B.16	+3.3VL		

\* Not connected at upper DIN M24/8 power supply connector;

\*\* Not connected at lower DIN M24/8 power supply connector.

## 2.2 Installation

Thanks to its plug-in compatibility this DIN M-type power supply unit allows for an easy installation, by which the power supply unit's male DIN M24/8 power connector is inserted into the backplane's mating female connector without the need of any intermediate adaptation.



### **Warning!**

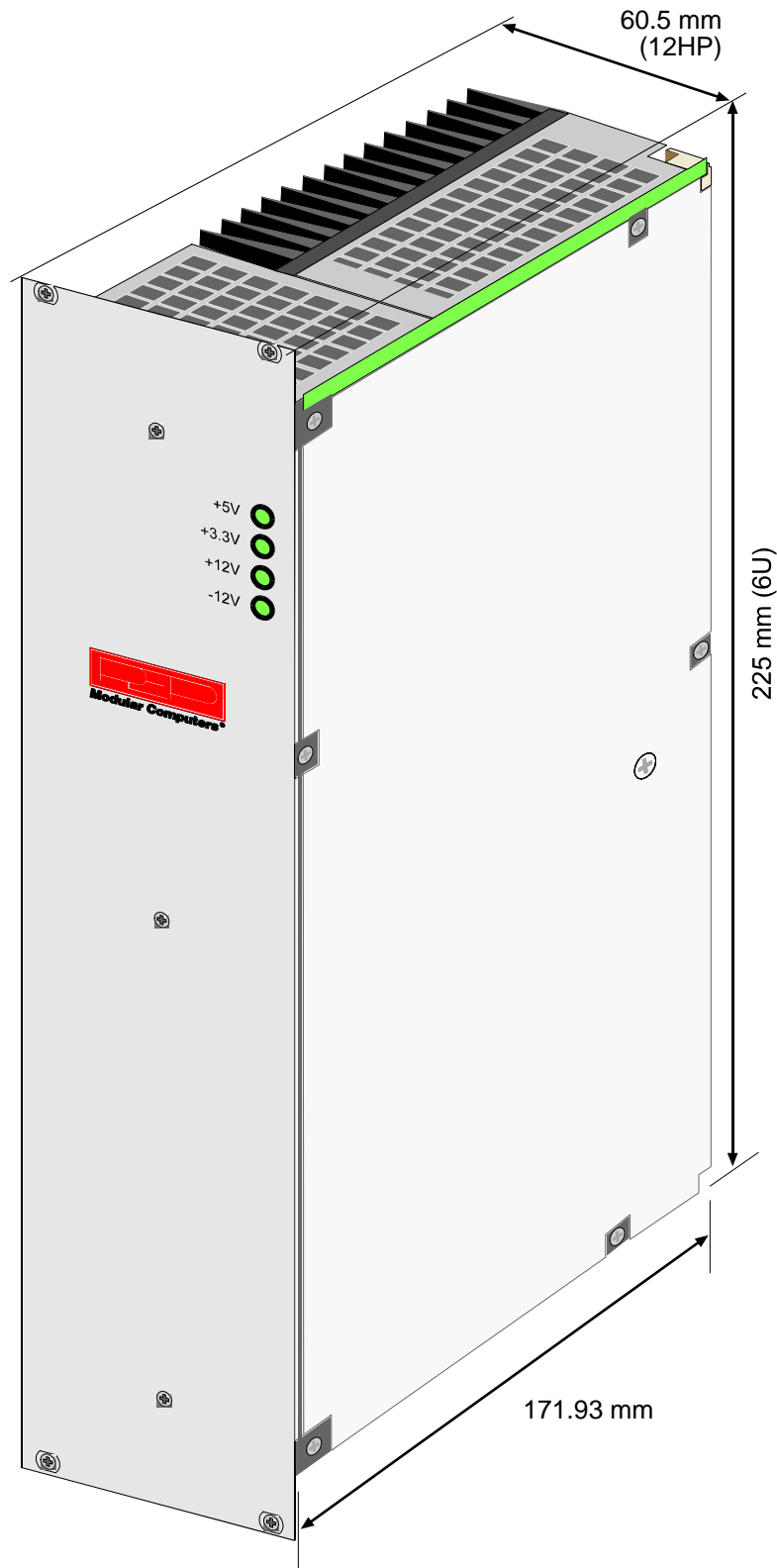
To ensure a safe 5V operation of your equipment it is necessary that on the backplane 5VL is connected to 5VF and 0VL to 0VF. PEP systems provide this configuration by default.

The maximum voltage compensation is 0.25V per line.



## 2.3 Mechanical Specifications

Figure 2: View of Power Supply Unit CP6-SVE-M270AC





## 2.4 Electrical Specifications

### Input

Input voltage ranges

$V_{EU} = 187V..264V$  AC

$V_{US} = 99V..138V$  AC

Frequency: 50Hz..60Hz

Voltage switching

Autoranging

Efficiency

Typ. 79%\*

\* <75% with redundancy

Input current limitation

Typ.  $\leq 15A_{peak}$  (cold state)

Typ.  $\leq 20A_{peak}$  (hot state)

Fuse

8 AT

### Output

Adjustment range  $V_{o1}$ ,  $V_{o2}$

$\pm 5\%$

Status indication

Green LED's for  $V_{o1}$ ,  $V_{o2}$ ,  $V_{o3}$ ,  $V_{o4}$

Ripple

$V_{o1}$ ,  $V_{o2} < 50mV_{pp}$ ,

$V_{o3}$ ,  $V_{o4} < 30mV_{pp}$

Noise voltage

Typ.  $50mV_{pp}$  (band width 20MHz)

Temperature coefficient

0.025% / K

Switch on / switch off performance

No overshooting of  $V_o$  (soft-start)

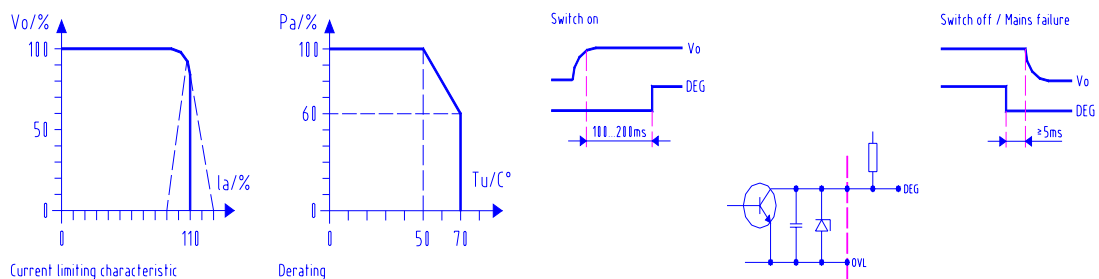
Rise-delay time

$< 0.5s$

Run-up time

$\leq 50ms$

**Figure 3: Output Power Diagrams**





## Regulation

Line regulation	$< 0.2\%$ for $V_{o1}$ , $V_{o2}$ $< 0.5\%$ for $V_{o3}$ , $V_{o4}$
Load regulation	$< 2.0\%$ for $V_{o1}^*$ $< 2.0\%$ for $V_{o2}^*$ $< 5.0\%$ for $V_{o3}$ , $V_{o4}$ <i>* <math>&lt; 5\%</math> with redundancy</i>
Response time	$< 0.5\text{ms}$ at $I_o$ 20..80%

## Protection and Control

Overvoltage protection	$125\% \pm 5\%$ for $V_{o1}$ , $V_{o2}$ $125\% \pm 10\%$ for $V_{o3}$ , $V_{o4}$ Automatic repetition
Current limitation	Typ. 110% of $I_{\text{Rated}}$ for $V_{o1}$ , $V_{o2}$ Typ. 140% of $I_{\text{Rated}}$ for $V_{o3}$ , $V_{o4}$ Effective for all outputs, outputs short-circuit proof
Overtemperature protection	Switches off when inside temperature becomes too high, switches on again with hysteresis
Mains buffering	$> 20\text{ms}$ at 100% load
Signal DEG (Derate)	Open-collector, $I_{\text{max}} = 48\text{mA}$ Low during start-up of $V_o$ , high 100-200ms after start-up of $V_o$ , low $\geq 5\text{ms}$ before break-down of $V_o$ (mains failure/switch-off with EN/INH)
Input EN (enable)	Power is ON only with EN low (TTL)
Input INH (inhibit)	Power always OFF with INH low (TTL)



## EMC

Interference suppression/immunity

EN 50082-2: 1992  
EN 61000-4-2: Intensity 4  
EN 61000-4-3: Noise level 10V/m  
EN 61000-4-4: Intensity 4  
EN 61000-4-5: Intensity 4  
EN 61000-4-11  
VDE (with switch-off and re-start)

Interference emission

EN 50081-1: 1992  
EN 55011/EN 55022: ClassB, interference transmission depends on assembly

## Safety

EN 60950/VDE 0805  
Safety Class I, VDE 0100  
UL 1950 / CSA 22.2-950

## Operating Data

Temperature range

0°C..+70°C with free convection

Temperature derating

2% / K at +50°C (see diagram)



### **Warning!**

Adequate thermal cooling of the power supply must be ensured. Therefore do not obstruct or hinder cooling air circulation or heat conduction within the power supply or surrounding equipment.

Failure to comply with this warning may result in damage to your equipment.



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