

# **CPCI Power Supply Manual**

## **PRODUCT DOCUMENTATION**

### **PD11 CP3-SVE-M75DC**

Reference ID: 24139 PD11

Revision: 01

Issued: December 01, 2003



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



## Revision History

<b>Manual/Product Title:</b>		CPCI Power Supply Manual: Product Documentation: CP3-SVE-M75DC
<b>Reference ID:</b>		24139 PD11
Rev. Index	Brief Description of Changes	Date of Issue
01	Initial Issue	Dec. 01, 2003

## Imprint

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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. This power supply is designed for use with the CP-Pocket only.

## 2. 75W M-Type Power Supply Unit

The main features of the 3U M-type, lower-range input, 75 W output DC/DC power supply unit CP3-SVE-M75DC are described in the following table:

**Table 1: Distinctive Features of Power Supply Unit CP3-SVE-M75DC**

Feature	Specification
Form Factor	3U
Front Panel Size	60.96 mm x 133.35 mm
Height of Power Supply Unit	3 U (128 mm)
Width of Power Supply Unit	8 HP (40 mm)
Depth of Power Supply Unit	171.9 mm (without connector and handle)
Mechanics	19" rack
Plug-In Compatibility	Yes
Power Supply Connector	DIN M24/8 connector
Input Voltage	20 V DC ... 60 V DC
Output Voltages / Currents	$V_1 = + 5.1 \text{ V}$ at 7.5 A symetrical, max. 9 A $V_2 = + 3.3 \text{ V}$ at 7.5 A symetrical, max. 9 A $V_3 = V_{\text{FAN}} = + 12 \text{ V}$ at 0.16 A
Output Power	75 W
Total Minimum Output Load	2 W
Cooling	Forced air cooling
Redundant Supply Capability	—
Status Indication	Separate LEDs for $V_1$ and $V_2$
Special Feature(s)	None



## 2.1 Mechanical Specifications

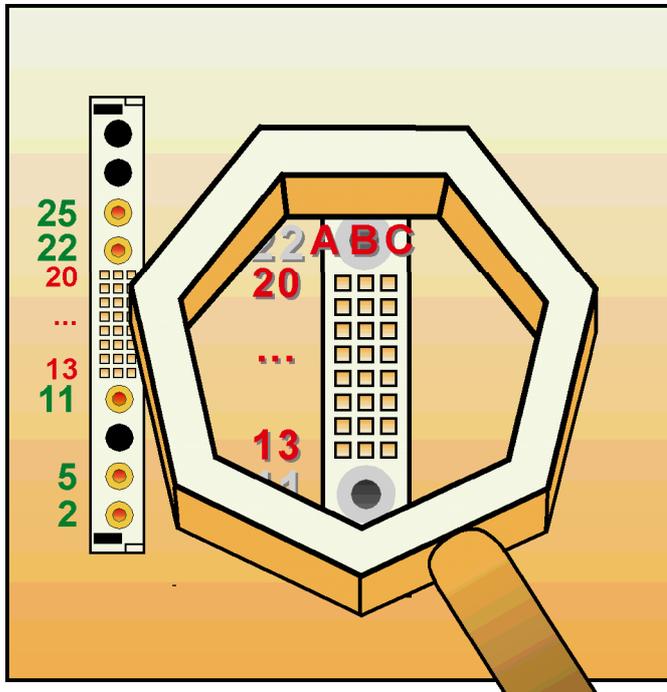
Figure 1: View of Power Supply Unit CP3-SVE-M75DC





## 2.2 Power Supply Connectors

### 2.2.1 DIN M24/8 Power Supply Connector



**Figure 2: Orientation of the DIN M24/8 Power Supply Connector**

Depending on the power supply version, DC power input may either be via the M24/8 connector or the front panel connector. The V1 ... V3 output voltages from the power supply unit to the backplane are connected via a 32-pole DIN 24/8 male power supply connector.

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

**Table 2: DIN M24/8 Connector Pinouts**

Pin	Function	Pin	Function
2	L+(depends on version)	B.17	+3.3VL
5	N (neutral) (depends on version)	B.18	+3.3VL
11	NC	B.19	+12VL
A.13	NC	B.20	NC
A.14	NC	C.13	NC
A.15	NC	C.14	NC
A.16	NC	C.15	NC
A.17	+5VF	C.16	+3.3VL
A.18	+3.3VL	C.17	+3.3VL
A.19	+12VL	C.18	+3.3VL
A.20	NC	C.19	+12VL
B.13	+3.3VL	C.20	NC
B.14	+3.3VL	22	+5VL
B.15	+3.3VL	25	OVL
B.16	+3.3VL		



### 2.2.2 Front Panel DC Input Power Connector

This connector is available for applications requiring input power from the front of the chassis. If required, this connector must be specified when ordering. This is a Phoenix, 3-contact, D-Sub receptacle type connector (VS-PSC-1.5/3-M). The following figure and table provide pinout information.

Figure 3: Front Panel DC Input Power Connector

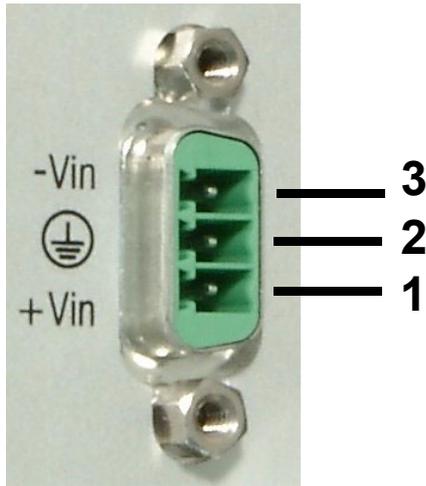


Table 4-3: Pinout of CONn

PIN	SIGNAL
1	+Vin (20 V DC ... 60 V DC)
2	PE
3	-Vin (GND/0V)

### 2.2.3 Line Input Connector

This connector is the complementary connector for the application side for connecting to this power supply. If the front panel DC input power connector is specified, this connector is delivered with the power supply. This is a Phoenix, 3-contact, D-Sub plug type connector (PSC1,5/3-F). The following figure and table provide pinout information.

Figure 4: Front Panel DC Input Power Connector

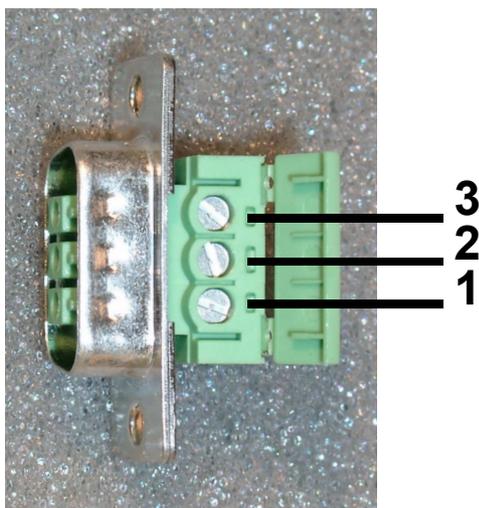


Table 4-4: Pinout of CONn

PIN	SIGNAL
1	+Vin (20 V DC ... 60 V DC)
2	PE
3	-Vin (GND/0V)



## 2.3 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.



### Note ...

The minimum input voltage for turn-on is 19.5 V after which normal operation is possible down to 18 V.

## 2.4 Electrical Specifications

### Input

Input voltage ranges	20V ... 60 V DC
Efficiency	Typ. 81 % @ 24 V Typ. 79 % @ 48 V
Input current limitation	5.5 A
Fuse	6.3 A

### Output

Output power $V_1$ (5.1 V), $V_2$ (3.3 V)	min. 0.1 A typical 7.5 A max. 9 A
Output power $V_3$ (12 V)	max. 0.16 A
Total output loads	min. 2 W max. 75 W
Status indication	Green LED's for $V_1$ , $V_2$
Ripple	$V_1, V_2 < 100 \text{ mV}_{pp}$ , $V_3 < 200 \text{ mV}_{pp}$
Noise voltage	Typ. 75 mV @ 7.5 A
Temperature regulation coefficient	0.02 % / K for $V_1$ , $V_2$ , and $V_3$
Switch on / switch off performance	No overshooting of $V_{out}$ (soft-start)
Rise-delay time	< 0.5 s
Start-up time	$\leq 5 \text{ ms}$



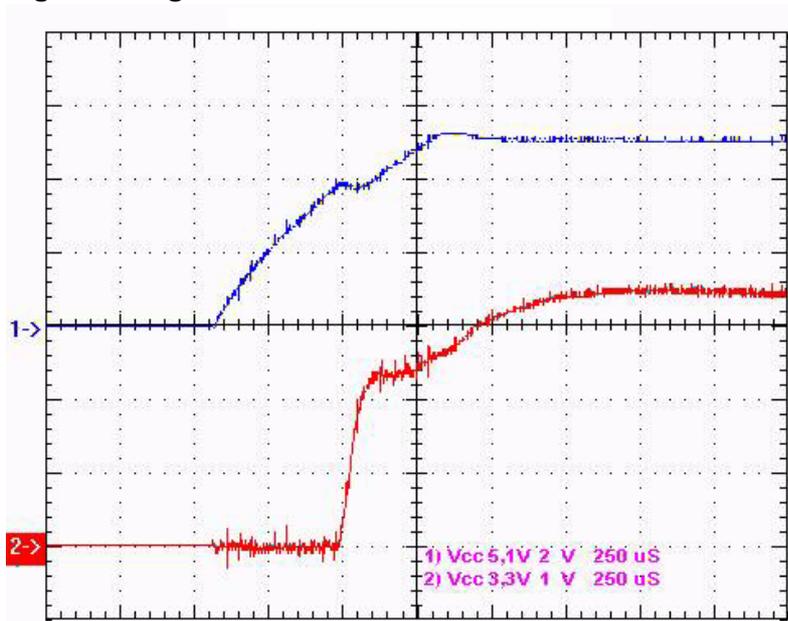
**Warning!**

Operation of this power supply with no load will result in improper operation of the power supply!

The supply voltage  $V_{03}$  for the CP-Pocket fan can deliver a load of 160 mA. Therefore, no other load is allowed to be connected. Only the fan can be connected to this voltage.

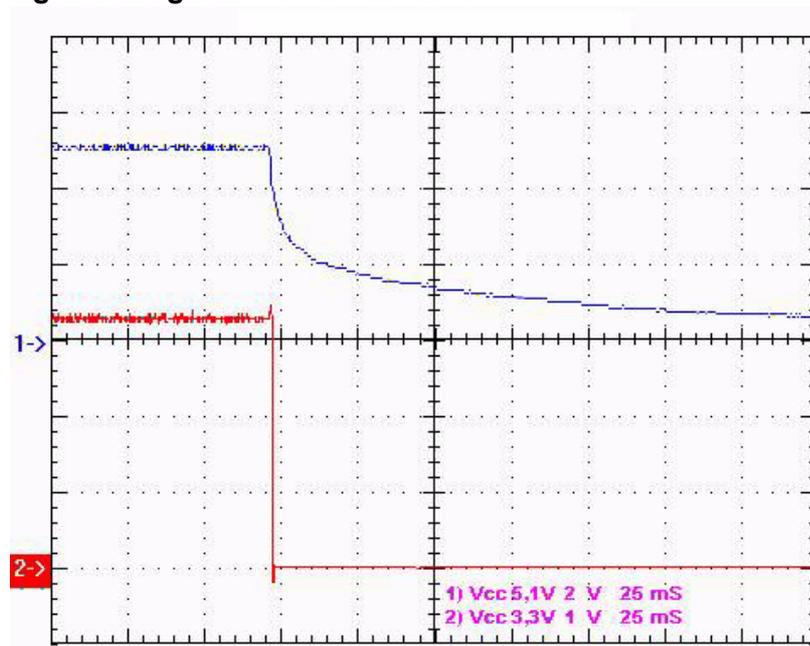
**Output Power Diagrams**

**Figure 5: Signal when Switched On**



Load: CP302 in CP-Pocket System

**Figure 6: Signal when Switched Off**



Load: CP302 in CP-Pocket System

**Regulation**

Line regulation	< 0.2 % for V <sub>1</sub> , V <sub>2</sub> at a load of 7.5 A each
Load regulation	< 0.5 % for V <sub>1</sub> , V <sub>2</sub>

**Protection and Control**

Overvoltage protection	126 % ± 6% for V <sub>1</sub> 126 % ± 16% for V <sub>2</sub> Automatic repetition
Output current inception	Typ. 113 % for V <sub>1</sub> Typ. 140 % for V <sub>2</sub>  Effective for all outputs, outputs short-circuit proof, "hiccup-mode" is used. Resettable fuse on V <sub>1</sub> and V <sub>2</sub> Non-resettable fuse on V <sub>3</sub>
Overtemperature protection	Switches off when inside temperature becomes too high, switches on again with hysteresis. Switch off at typ. 105°C base plate. Output short circuit duration: continuous

**Environment**

Operating ambient temperature	0 - 50 °C
Derating temperature	< 50°C / 0 % power derating
Humidity	10 - 90 %, non-condensing

**EMC**

Interference suppression/immunity	EN 61000-6-2 EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-6
Interference emission	EN 50081-1 EN 55011/EN 55022: interference transmission depends on assembly



**Safety**

CB Schema  
EN 60950/VDE 0805  
Safety Class I



***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.