Modular Computers®

CPCI
Power Supply
Manual

PRODUCT DOCUMENTATION

PD04
CP3-SVE-M180AC

Reference ID: 24139 PD04
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: CP3-SVE-M180AC
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Rev. Index	Brief Description of Changes	Date of Issue
01	Initial Issue	Feb. 01, 2002

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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. 180W M-Type Power Supply Unit

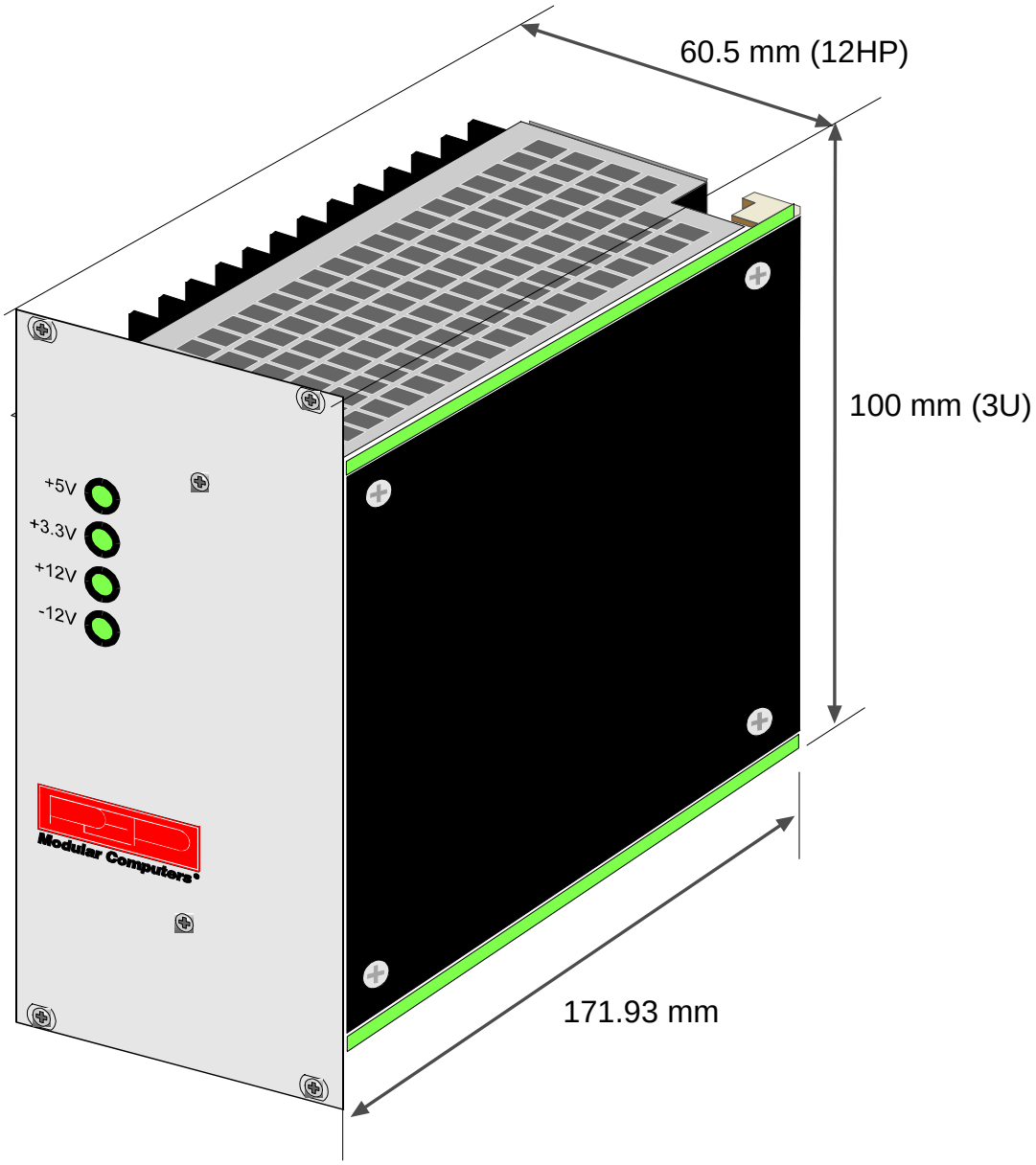
The main features of the 3U M-type, 120V/230V input, 180W output AC/DC power supply unit CP3-SVE-M180AC are described in the following table:

Table 1: Distinctive Features of Power Supply Unit CP3-SVE-M180AC

Feature	Specification
Form Factor	3U
Frontpanel Size	60.96* 133.35 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
Voltage Switching	Autoranging
Output Power	180W
Output Voltages/Currents	V_{01} = +3.3V at 14A V_{02} = +5.1V at 20A V_{03} = +12V at 2A V_{04} = -12V at 1A
Cooling	Free convection
Redundant Supply Capability	—
Status Indication	Separate LEDs for V_{01}..V_{04}
Special Feature(s)	—

2.1 Mechanical Specifications

Figure 1: View of Power Supply Unit CP3-SVE-M180AC



2.2 Power Supply Connector

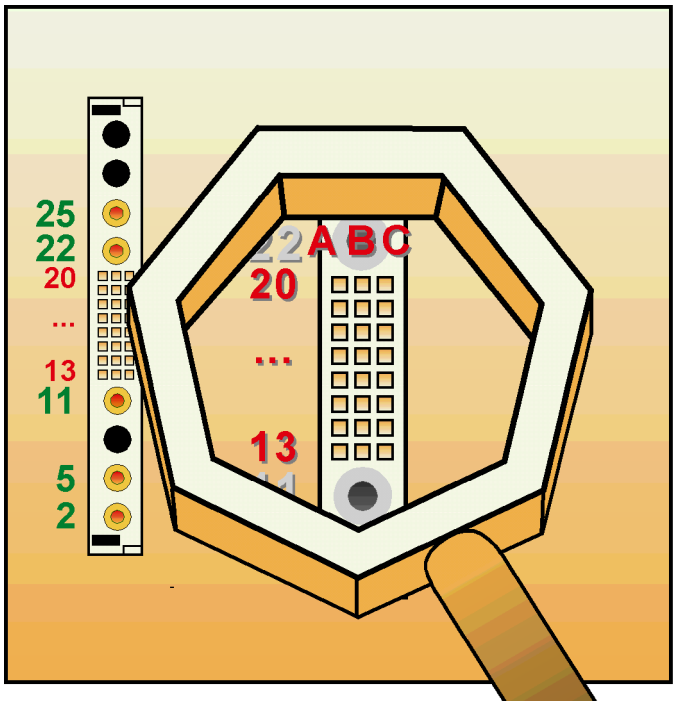


Figure 2: Orientation of the DIN M24/8 Power Supply Connector

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 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	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	N/C	C.13	N/C
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	–	

N/C = Not connected.

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.

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.

2.4 Electrical Specifications

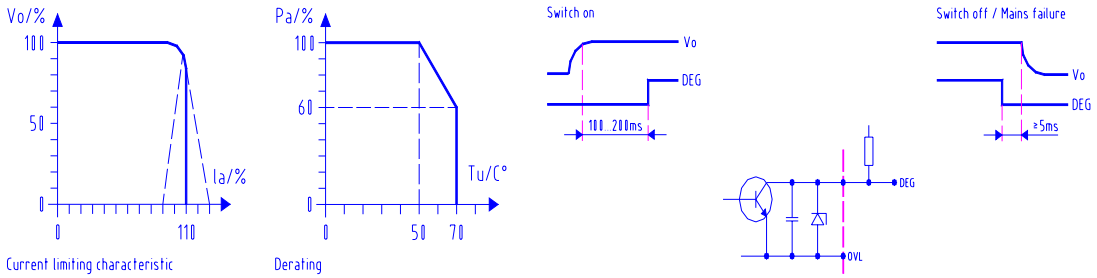
Input

Input voltage ranges	V_{EU} = 187V..264V AC V_{US} = 99V..138V AC Frequency: 50Hz..60Hz
Voltage switching	Autoranging
Efficiency	Typ. 82%
Input current limitation	Typ. ≤ $15A_{peak}$ (cold state) Typ. ≤ $20A_{peak}$ (hot state)
Fuse	6.3 AT

Output

Adjustment range V_{o1}, V_{o2}	± 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	≤ 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	< 0.1% for V_{o1} < 0.1% for V_{o2} < 5.0% for V_{o3}, V_{o4}
Response time	< 0.5ms at I_o 20..80%

Protection and Control

Overvoltage protection	125% ± 5% for V_{o1}, V_{o2} 125% ± 10% for V_{o3}, V_{o4} Automatic repetition
Current limitation	Typ. 110% of I_{Rated} for V_{o1}, V_{o2} Typ. 200% of I_{Rated} for V_{o3} Typ. 140% of I_{Rated} for V_{o4} Effective for all outputs, outputs short-circuit proof, max. 10 min.
Overtemperature protection	Switches off when inside temperature becomes too high, switches on again with hysteresis
Mains buffering	> 20ms at 100% load
Signal DEG (Derate)	Open-collector, I_{max} = 48mA Low during start-up of V_o, high 100-200ms after start-up of V_o, low ≥ 5ms before break-down of V_o (mains failure/switch-off)
Permitted switch off/on cycle time	≥ 2s

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 3 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
CSA NRTL/C / 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.