CPCI
Power Supply
Manual

PRODUCT DOCUMENTATION

PD11
CP3-SVE-M75DC

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September 24, 2008

kontron

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01	Initial issue	Dec.01, 2003
02	Revised to include erratas and conversion to Kontron format	Sep.24, 2008

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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 or custormer specific applications 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	40.64 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 V at 7.5 A symetrical, max. 9 A V_2 = + 3.3 V at 7.5 A symetrical, max. 9 A $V_3 = V_{FAN}$ = + 12 V at 0.16 A
Output Power	75 W
Total Minimum Output Load	2 W
Cooling	Forced air cooling, 1 m/s recommended minimum
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

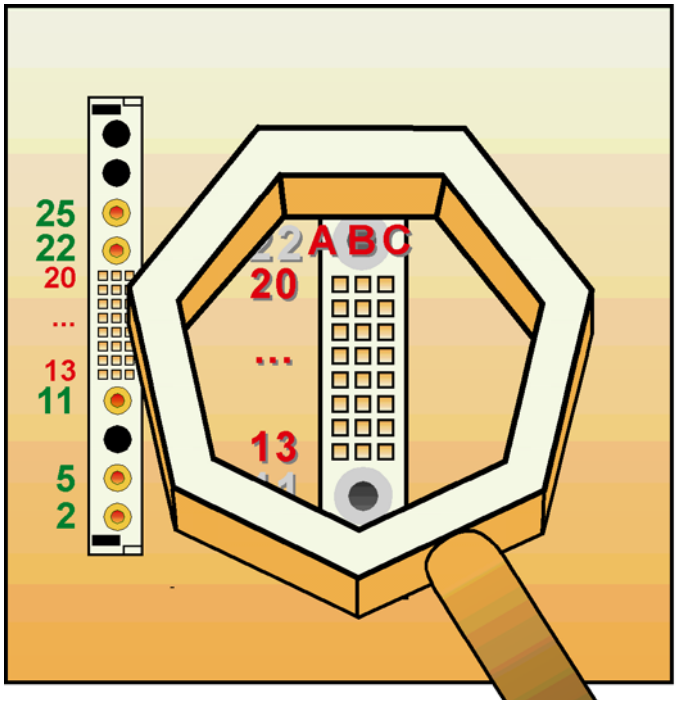


Figure 2: Orientation of the DIN M24/8 Power Supply Connector

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

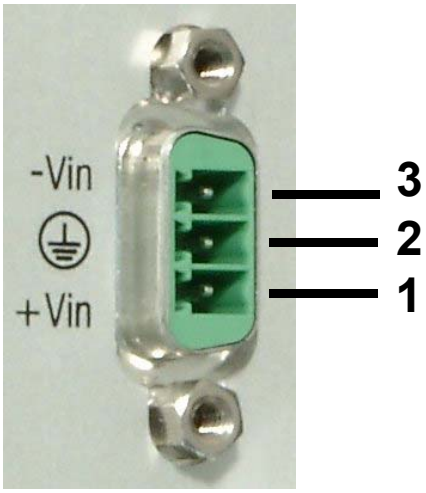


Table 4-3: Pinout of CONn

PIN	SIGNAL
1	+Vin
2	PE
3	-Vin

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

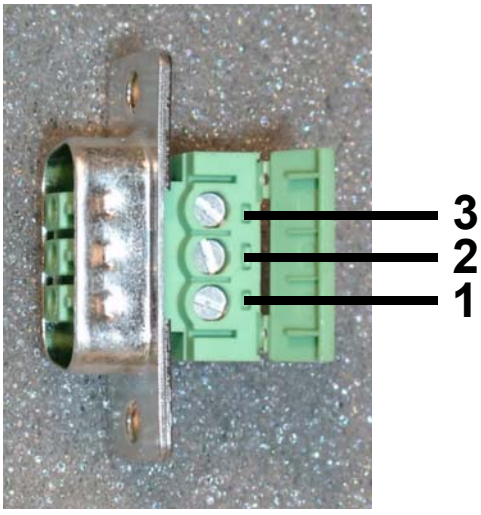


Table 4-4: Pinout of CONn

PIN	SIGNAL
1	+Vin
2	PE
3	-Vin

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. Use DC input power cable with a minimum cross-section of 0.75 mm².

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
Input fuse F1 (may not be replaced by the customer)	6.3 A, type "Wickmann", no. 374/TR5

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
Output fuse F2 (V_3) (may not be replaced by the customer)	0.16 A, type "Wickmann", no. 374/TR5
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 mV_{pp}, V_3 < 200 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	≤ 5 ms

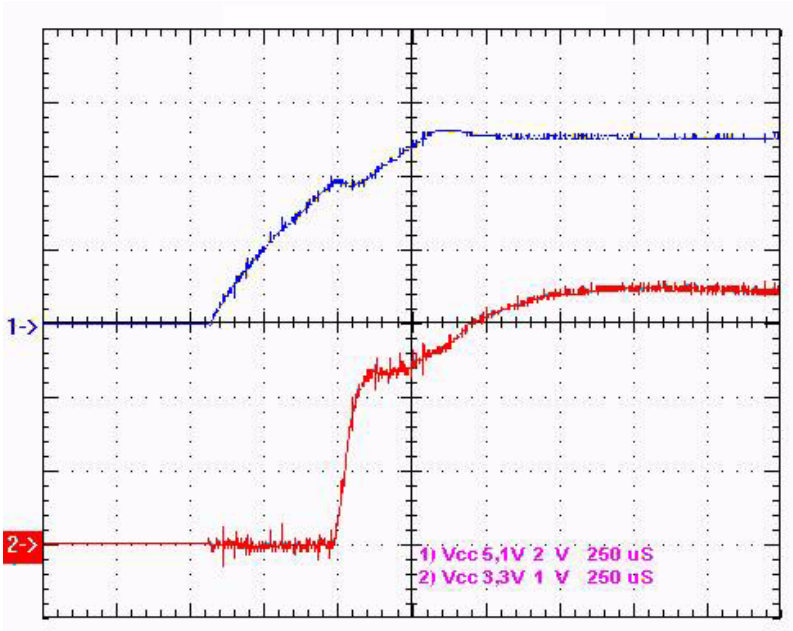
Warning!

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.

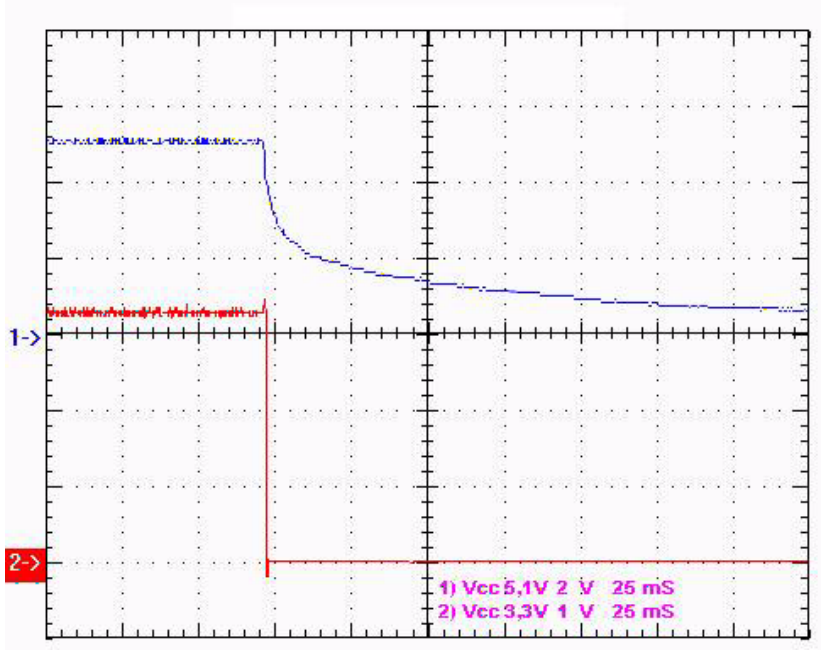
Output Power Diagrams

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_1, V_2 at a load of 7.5 A each
Load regulation	< 0.5 % for V_1, V_2

Protection and Control

Overvoltage protection	126 % ± 6% for V_1 126 % ± 16% for V_2 Automatic repetition
Output current inception	Typ. 113 % for V_1 Typ. 140 % for V_2 Effective for all outputs, outputs short-circuit proof, “hiccup-mode” is used. Resettable fuse on $V_{1\ and}$ V_2 Non-resettable fuse on V_3
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	93 % RH at 40°C, non-condensing (according to IEC60068-2-78)

EMC

Interference suppression/immunity	EN 61000-6-2 EN 55024
Interference emission	EN 50081-1 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.