

» User Guide «

**CPCI
Power Supply
Manual**

PRODUCT DOCUMENTATION

**PD16
CP3-SVE-M75DC-24**

Reference ID: 24139 PD16, Rev. 01
February 28, 2011



Revision History

| Manual / Product Title: | | CPCI Power Supply Manual: Product Documentation: CP3-SVE-M75DC-24 |
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| Reference ID: | | 24139 PD16 |
| Rev. | Brief Description of Changes | Date of Issue |
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Imprint

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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 customer 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-24 are described in the following table:

Table 1: Distinctive Features of Power Supply Unit CP3-SVE-M75DC-24

| 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 rear connector |
| Input Voltage | 18 V DC ... 36 V DC |
| Output Voltages / Currents | $V_1 = + 5.1 \text{ V}$ at 7.5 A symetrical, max. 15 A $V_2 = + 3.3 \text{ V}$ at 7.5 A symetrical, max. 15 A $V_3 = V_{\text{FAN}} = + 12 \text{ V}$ at 0.16 A |
| Output Power | 75 W |
| Total Minimum Output Load | 0 W (for 3.3V and 5.0V) |
| 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) | Input power either via DIN M24/8 rear connector or Phoenix 3-contact D-Sub front connector (depends of variant ordered) |



2.1 Mechanical Specifications

Figure 1: View of Power Supply Unit CP3-SVE-M75DC-24





2.2 Power Supply Connectors

2.2.1 DIN M24/8 Power Supply Connector

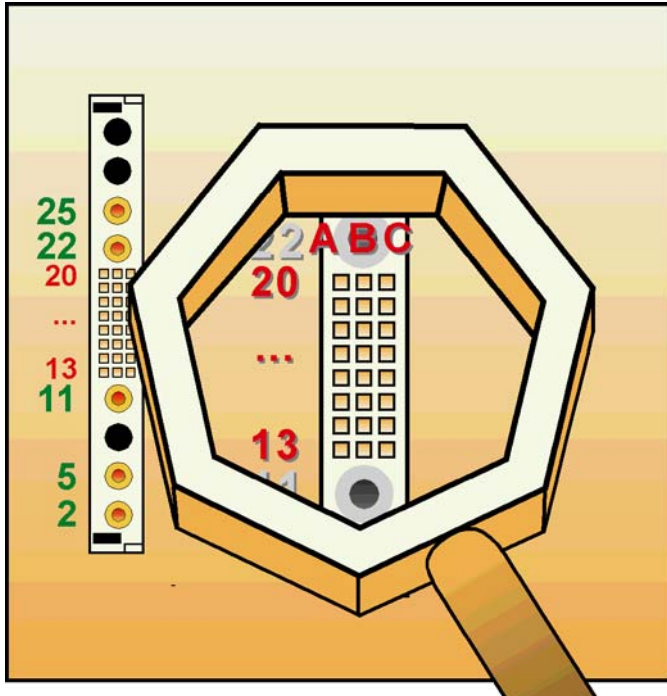


Figure 2: Orientation of the DIN M24/8 Power Supply Connector

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 | +Vin or NC (depends on version) | B.17 | +3.3VL |
| 5 | -Vin or NC (depends on version) | B.18 | +3.3VL |
| 11 | PE | 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 | NC | 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

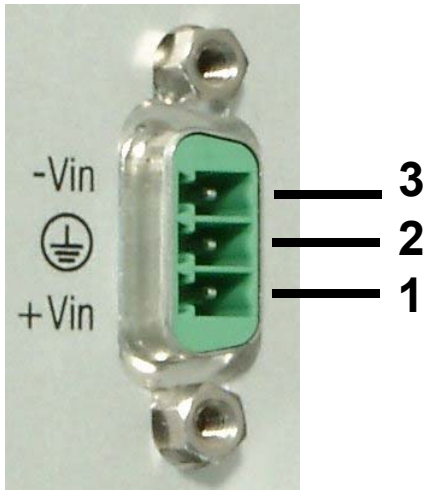


Table 4-3: Pinout of CONn

| 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

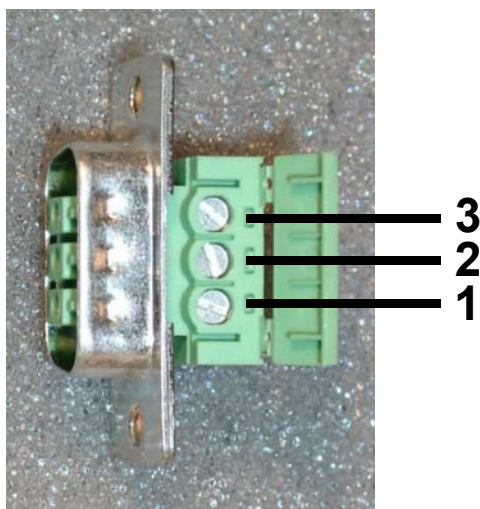


Table 4-4: Pinout of CONn

| 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 18 V. Use DC input power cable with a minimum cross-section of 0.75 mm².

2.4 Electrical Specifications

Input

| | |
|--|--------------------------------------|
| Input voltage ranges | 18V ... 36 V DC |
| Efficiency | Typ. 83 % |
| Input fuse F1 (may not be replaced by the customer) | 6.3 AT, type "Wickmann", no. 374/TR5 |

Output

| | |
|---|---|
| Output power V ₁ (5.1 V), V ₂ (3.3 V) | 0 A typical 7.5 A max. 15 A |
| Output power V ₃ (12 V) | min. 0.05 A - max. 0.16 A (15 - 17 V without load) |
| Output fuse F2 (V ₃) (may not be replaced by the customer) | 0.16 AT, type "Wickmann", no. 374/TR5 |
| Total output loads | min. 0 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 | 0.03 % / 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 |



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 (trip range % V _{0 nom}) | 115 - 140% |
| Output current limitation | 100% - 140% nominal output 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. 100°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 61000-6-4 EN 55022 |

Safety

| | |
|-----------|------------|
| CB Schema | EN 60950-1 |
|-----------|------------|



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.