

CP3-SVE-P200AC



Positronic47 AC Power Supply for CompactPCI

- ▶ Wide range input
- ▶ 200 W - 4 outputs - flexible load distribution
- ▶ Operating at -40 °C/+70 °C, 50 °C without derating
- ▶ Redundant operation and current sharing
- ▶ UL/CSA 60950-1 and IEC/EN 62368-1

POSSIBILITIES START HERE

CP3-SVE-P200AC

Positronic47 AC Power Supply for 3U CompactPCI

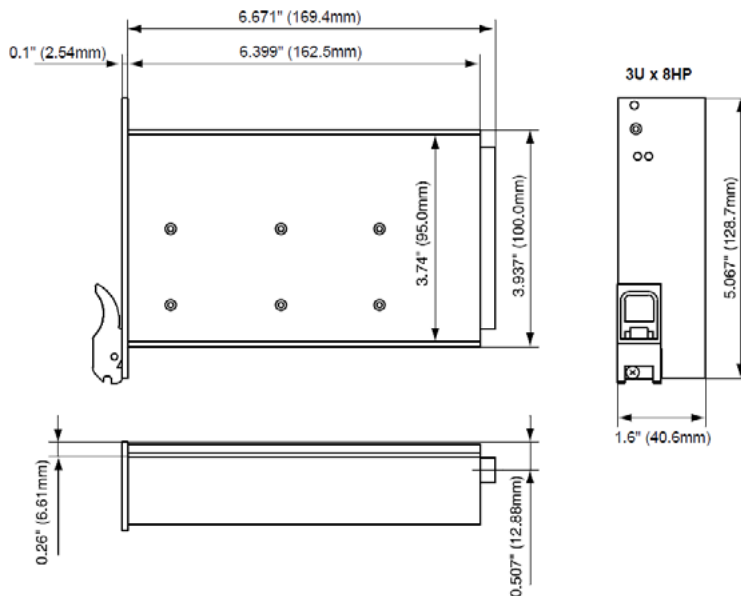
The product description provided with this data sheet is regarded as part of the general Kontron CPCI Power Supply manual ID 24139. For further information, in particular general details as well as disclaimer, safety and warranty statements, refer to the CPCI Power Supply Manual.

This power supply is designed for use with standard CPCI systems as well for integration in electronic or electrical enclosures, e.g. Kontron's 19" racks.

▶ TECHNICAL INFORMATION

| | |
|-----------------------------|--|
| FORM FACTOR | 3U |
| FRONT PANEL SIZE | 40.6 mm x 128.7 mm |
| MECHANICS | 19" rack |
| PLUG-IN COMPATIBILITY | yes |
| POWER SUPPLY CONNECTOR | Positronic 47-pin connector |
| INPUT VOLTAGE | 90 V .. 264 V AC, 230 V nominal |
| INPUT FREQUENCY | 47 ... 63 Hz |
| VOLTAGE SWITCHING | Continuous input range |
| OUTPUT VOLTAGES / CURRENTS | V1 = +5 V at 40 A V2 = +3.3 V at 40 A V3 = +12 V at 5.5 A V4 = -12 V at 2 A |
| OUTPUT POWER | 200 W with 250 LFM forced-air cooling 250 W with 400 LFM forced-air cooling |
| COOLING | 250 LFM forced-air cooling |
| REDUNDANT SUPPLY CAPABILITY | Always |
| STATUS INDICATION | LED's for input good and power fail |
| SPECIAL FEATURE(S) | Power sharing |

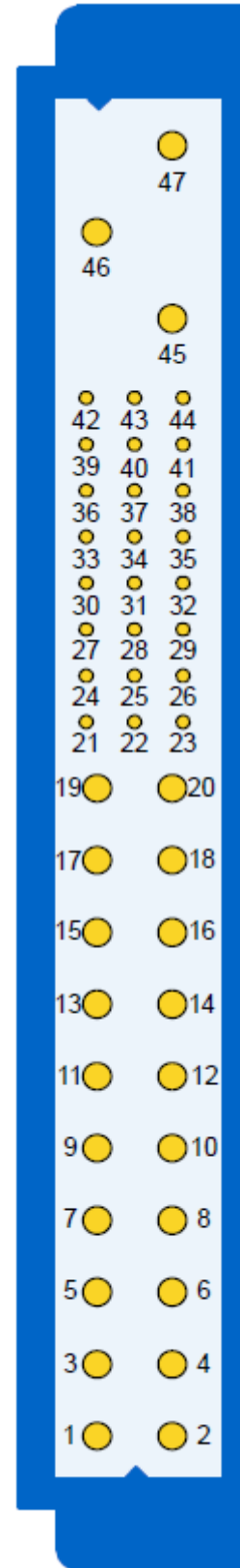
▶ DIMENSIONS



▶ POWER SUPPLY CONNECTOR

The V input voltage to the power supply unit and the V1 ... V4 output voltages from the power supply unit to the backplane are connected via a 47-pin Positronic male power supply connector. For the pinouts of the Positronic P-47 power supply connector please refer to the following table.

| PIN | SIGNAL NAME | DESCRIPTION |
|-------|-------------|--------------------|
| 1-4 | V1 | V1 OUTPUT (+5 V) |
| 5-12 | RTN | V1 and V2 RETURN |
| 13-18 | V2 | V2 OUTPUT (+3.3 V) |
| 19 | RTN | V3 RETURN |
| 20 | V3 | V3 OUTPUT (+12 V) |
| 21 | V4 | V4 OUTPUT (-12 V) |
| 22 | RTN | SIGNAL RETURN |
| 23 | RESERVED | RESERVED |
| 24 | RTN | V4 RETURN |
| 25 | NC | NOT CONNECTED |
| 26 | RESERVED | RESERVED |
| 27 | EN# | ENABLE |
| 28 | NC | NOT CONNECTED |
| 29 | NC | NOT CONNECTED |
| 30 | V1 SENSE | V1 REMOTE SENSE |
| 31 | NC | NOT CONNECTED |
| 32 | NC | NOT CONNECTED |
| 33 | V2 SENSE | V2 REMOTE SENSE |
| 34 | S RTN | SENSE RETURN |
| 35 | V1 SHARE | V1 CURRENT SHARE |
| 36 | V3 SENSE | V3 REMOTE SENSE |
| 37 | NC | NOT CONNECTED |
| 38 | DEG# | DEGRADE SIGNAL |
| 39 | INH# | INHIBIT |
| 40 | NC | NOT CONNECTED |
| 41 | V2 SHARE | V2 CURRENT SHARE |
| 42 | FAL# | FAIL SIGNAL |
| 43 | NC | NOT CONNECTED |
| 44 | V3 SHARE | V3 CURRENT SHARE |
| 45 | CGND | CHASSIS GROUND |
| 46 | ACN | AC INPUT NEUTRAL |
| 47 | ACL | AC INPUT LINE |



// Orientation of the Positronic P-47 Power Supply Connector

▶ INSTALLATION

Thanks to its plug-in compatibility this P-type power supply unit allows for an easy installation, by which the power supply unit's male Positronic 47-pin power connector is inserted into the

backplane's mating female connector without the need of any intermediate adaptation.

WARNING!

If this type of power supply is removed for any reason from an operating system, do not reinstall immediately. Wait 1 to 2 minutes before reinstalling. Failure to comply with this may result in an

Output Failure indication on the power supply. This is due to an internal protection feature of the power supply which requires time to cool down before the power supply is put back into operation.

▶ ELECTRICAL SPECIFICATION

INPUT

| | |
|---------------------|--|
| INPUT VOLTAGE - AC | 90 .. 264 VAC continuous input range |
| INPUT FREQUENCY | 47 .. 63 Hz |
| HOLD-UP TIME | 20 ms |
| INPUT PROTECTION | Non-user serviceable, internally-located input line fuse |
| PEAK INRUSH CURRENT | 15 A Inrush surge current internally limited by thermistor and electronic switch |
| OPERATING FREQUENCY | 125 .. 145 kHz Switching frequency of main output transformer |

OUTPUT

| | |
|--------------------------|---|
| EFFICIENCY | 80 % at full rated load, 115 VAC |
| MINIMUM LOAD; V1, V2, V3 | required to maintain regulation with no load on V4: NONE |
| MINIMUM LOAD, V3 | required to maintain regulation on V4: 75 % of V4 Load |
| RIPPLE AND NOISE | At full load, 20 MHz bandwidth: See Regulation |
| OUTPUT POWER | 200 W at 250 LFM forced-air cooling 250 W at 400 LFM forced-air cooling |
| OVERSHOOT | No overshooting of output voltage at turn-on/off |
| REGULATION | See Regulation table. Total regulation includes: line changes over the specified input range, changes in load starting at 50 % load and changing to 100 % load. |
| TURN-ON DELAY | 120 ms required for initial output voltage stabilization |

REGULATION

| | |
|----------------------|---|
| ADJUSTMENT RANGE | N/A |
| OUTPUT CURRENT | V1: 40 A, V2: 40 A, V3: 5.5 A, V4: 2 A |
| LINE REGULATION | +/-10 mV for V1, V2, V3, V4 |
| LOAD REGULATION | V1, V2: +/-10 mV V3: +/-30 mV V4: -380 mV (droop characteristic for passive current sharing) |
| OUTPUT VOLTAGE NOISE | V1: typ. 45 mV _{pp} , max 60 mV _{pp} V2: typ. 40 mV _{pp} , max. 60 mV _{pp} V3 and V4: max. 120 mV _{pp} |

► ELECTRICAL SPECIFICATION

PROTECTION AND CONTROL

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|--|--|
| OVERVOLTAGE PROTECTION | 120 .. 130 % _{Vnom} latch style overvoltage protection |
| OVERLOAD PROTECTION | Fully protected against output overload and short circuit. Automatic recovery upon removal of overload condition. |
| OVER TEMPERATURE PROTECTION | System shutdown due to excessive internal temperature, automatic reset. |
| POWER FAIL (FAL#) | TTL compatible signal, open collector active low signal. Indicates any output below 90 % and/or a low input <85 VAC. |
| CURRENT SHARE | 10 % Accuracy of shared current with up to 6 parallel units of the same type of power supply. Single wire current share on V1, V2, and V3. |
| SENSE LINES | Available for V1, V2, V3. Compensation of voltage drops across the connector contacts and if necessary, across the load lines |
| INHIBIT (INH#) | TTL-compatible signal inhibited with GND or TTL "0" |
| ENABLE (EN#) | Contact closure to external ground to start unit. On shortest pin (last make, first break) |
| OVERTEMPERATURE WARNING (DEG#) | Provides warning when power supply temperature exceeds rating. TTL-compatible open |
| FRONT PANEL LED STATUS INDICATORS | Input OK (Green), Output Failure (Red). In redundant setups, Output Failure may also indicate that there is no main power input to the power supply |

RELIABILITY

| | |
|-------------|--|
| MTBF | According to MIL-HDBK-217F, notice 2: 279.000 hrs at Ground benign 40 °C 57.000 hrs at Ground fixed 40 °C 31.000 hrs at Ground fixed 70 °C 33.000 hrs at Ground mobile 50 °C |
|-------------|--|

EMC / EMI

| | |
|----------------------------------|---|
| ELECTRIC STRENGTH TEST | EN 62911 and IEC/EN 62368-1; pretested with >= 4.3 kVDC Input to Output |
| ELECTROMAGNETIC EMISSIONS | EN55011:2016/A1:2017, Group1, Class A, conducted and radiated |
| ELECTROSTATIC DISCHARGE | 8 kV per IEC/EN61000-4-2, level 4, contact discharge |
| ELECTROMAGNETIC FIELD | 10 V/m per IEC/EN61000-4-3, level 3 |
| EFT/BURST | +/-2 kV per IEC/EN61000-4-4, level 3 |
| INPUT SURGE | 1 kV Line to Line, 2kV Line to Ground, per IEC/EN61000-4-5, level 3 |
| CONDUCTED DISTURBANCE | 10 V per IEC/EN61000-4-6, level 3 |
| INSULATION RESISTANCE | >300 MΩ at 500 VDC; Input to (Case+Output) and Output to Case |

SAFETY

| | |
|--|--|
| | UL 60950-1, CSA 60950-1, IEC 62368-1, EN 62368-1 |
|--|--|

ENVIRONMENT

| | |
|------------------------------|--|
| ALTITUDE | 10k A SL Ft. operating 40k A SL Ft. non-operating |
| OPERATING TEMPERATURE | At 100 % load: -40 °C .. +50 °C with 250 LFM forced-air cooling At 50 % load: -40 °C .. +70 °C, derate linearly above 50 °C by 2.5 % per °C |
| STORAGE TEMPERATURE | -40 °C .. +85 °C |
| RELATIVE HUMIDITY | IEC/EN 60068-2-78, 5 .. 93 % non-condensing |
| SHOCK | IEC/EN 60068-2-27, 20 G Peak acceleration |
| VIBRATION | IEC/EN 60068-2-35, 4.9 GRMS Random vibration, 20 Hz to 500 Hz, 3 axis |

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.

NUCLEAR AND MEDICAL APPLICATIONS

These products are not designed or intended for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems.

TECHNICAL REVISIONS

The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.

MANUFACTURER

Bel Fuse Inc., Jersey City, NJ 07302, USA.

▶ ORDERING INFORMATION

| ARTICLE | DESCRIPTION |
|-------------------|---|
| CP3-SVE-P200AC | CompactPCI Power Supply, 3U, 200 W, 230 VAC, 3.3 V/40 A, 5V/40 A, +12V/5.5 A, -12 V/1.5 A. With Positronic47 connector. Pinout as in PICMG 2.11. 8 HP width, frontpanel with status LED. Operating temperature -40 °C/+70 °C (50 °C without derating) |
| CP3-SVE-P200AC-CC | With Conformal Coating. Minimum order quantity 10 |

▶ GLOBAL HEADQUARTERS

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