Product Information

SRU-UPS

CompactPCI® Serial

and other 19-Inch Systems

In-Line Board-Mount Uninterruptible Power Supply

General

The SRU-UPS is a power backup unit, housed on a 3U Eurocard, suitable e.g. for CompactPCI® Serial backplanes or other 19-inch based systems. Intended for use in addition (in-line) to a PSU, it can be regarded as uninterruptible power supply (UPS).

The SRU-UPS can pass through up to 60W (12V/5A) from its power input to the CPU board and peripheral cards, reasonable for small to medium systems. When a power fail situation occurs, the SRU-UPS sustains full power on its output for >10s, sufficient for a normal shutdown of the operating system without loss of data.

The SRU-UPS is also a backup solution for short power failures. During normal operation, the input voltage is forwarded to the SRU-UPS output with a small loss of <0.3V. When the UPS detects an under-voltage condition (<11.5V) on its power input, output power will be generated by a DC/DC converter instead, derived from an array of on-board ultra capacitors.

The SRU-UPS is equipped with a PwrBlade® backplane connector. EKF offers suitable CompactPCI® Serial backplanes with two adjacent PwrBlade® slots for both a removable power supply and the SRU-UPS.

Feature Summary

General

- Single size Eurocard 3U, 100x157mm^2
- Front panel width 8HP
- PwrBlade® backplane connector (+12V DC input, +12V DC output)
- +12V DC input via PwrBlade® P4/P5 (external cable assembly, from external power supply)
- Option +12V DC input via PwrBlade® P6/P8 (custom backplane routing)
- Custom CompactPCI® Serial backplanes w. dual power slots available, for removable power supply and SRU-UPS adjacent in-line

UPS

- In-line operation with additional power supply
- For usage on a standard backplane PwrBlade® slot - DC input pins P4/P5 (option 1)
- For usage on a custom backplane PwrBlade® slot - DC input pins P6/P8 (option 2)
- Custom backplanes w. dual power slots available (PSU & UPS)
- Normal operation is +12V input to output bypass mode
- Backup operation is automatically entered when input power failure occurs
- Input voltage 12VDC (11.6VDC to 16VDC)
- Input current 5.8A nom.
- Output power 60W both modes normal (bypass) and backup
- Output voltage normal (bypass) mode V_{IN} - 0.3V @100% load
- If possible, adjust input voltage to +12.3VDC for compensation of voltage loss
- Output voltage backup mode +12VDC ±2%, ≤30mV ripple, 97% efficiency typ.
- Backup time vs. load current @25°C typ. 14s @5A, 20s @3.5A, 35s @2A, 70s @1A
- Power fail detection when input voltage falls below +11.5VDC
- Backup power source on-board super capacitors 4 x 100F
- Intelligent capacitor charge sharing
- Charge current up to 6.2A depending on output load
- Charge time w/o output load <60s
- Charge time w. full output load ~150s
- Operating temperature -20°C to +70°C
- Option power fail output signal
- CPU Card UEFI (BIOS) support for OS emergency shutdown on power fail
- Available for SC4-CONCERTO, SC5-FESTIVAL (PWR_FAIL#), and PC7-FESTIVAL (FAL#)
- UEFI Setup allows variable delay and additional settings

Feature Summary

Special Features

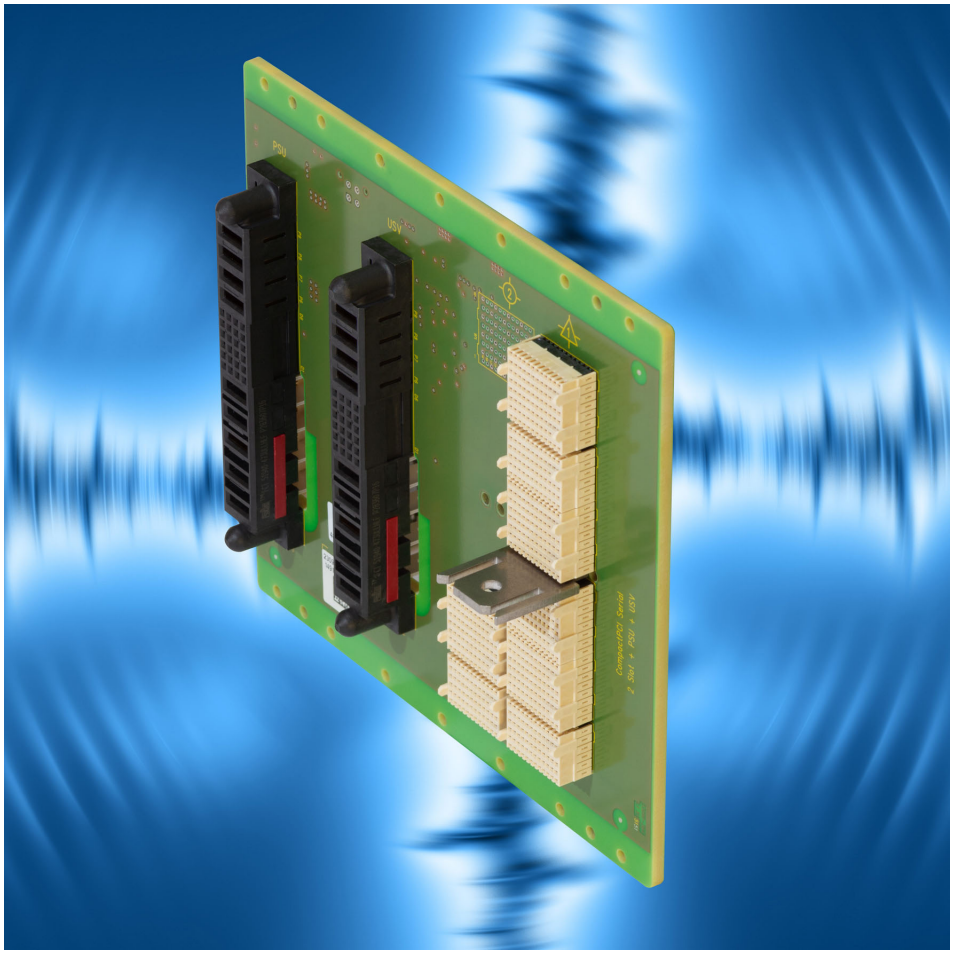
- FCI/Amphenol PwrBlade® backplane header, 9 x power 24 x signal contacts
- Power pin assignment similar to nVent and Trenew removable power supplies (AC contacts = NC)
- COTS CompactPCI® Serial backplane available with two adjacent (8HP pitch) PwrBlade® slots for removable power supply and and SRU-UPS (EKF part no. 932.8.04.998)
- Backplane usage is scalable - if an UPS is not required power supply can be moved into UPS slot
- Custom backplane solutions CompactPCI® Serial or other Eurocard based available on request
- Front handle micro-switch can be used as system power button replacement

Applications

- Short time backup solution e.g. bridging the time gap from general power failure to emergency generator startup
- Can be used to backup the system until normal shutdown of the operating system has been accomplished (shutdown initiated by power fail output signal from PSU or UPS)
- System reliability enhancement for critical mains supply

Regulatory

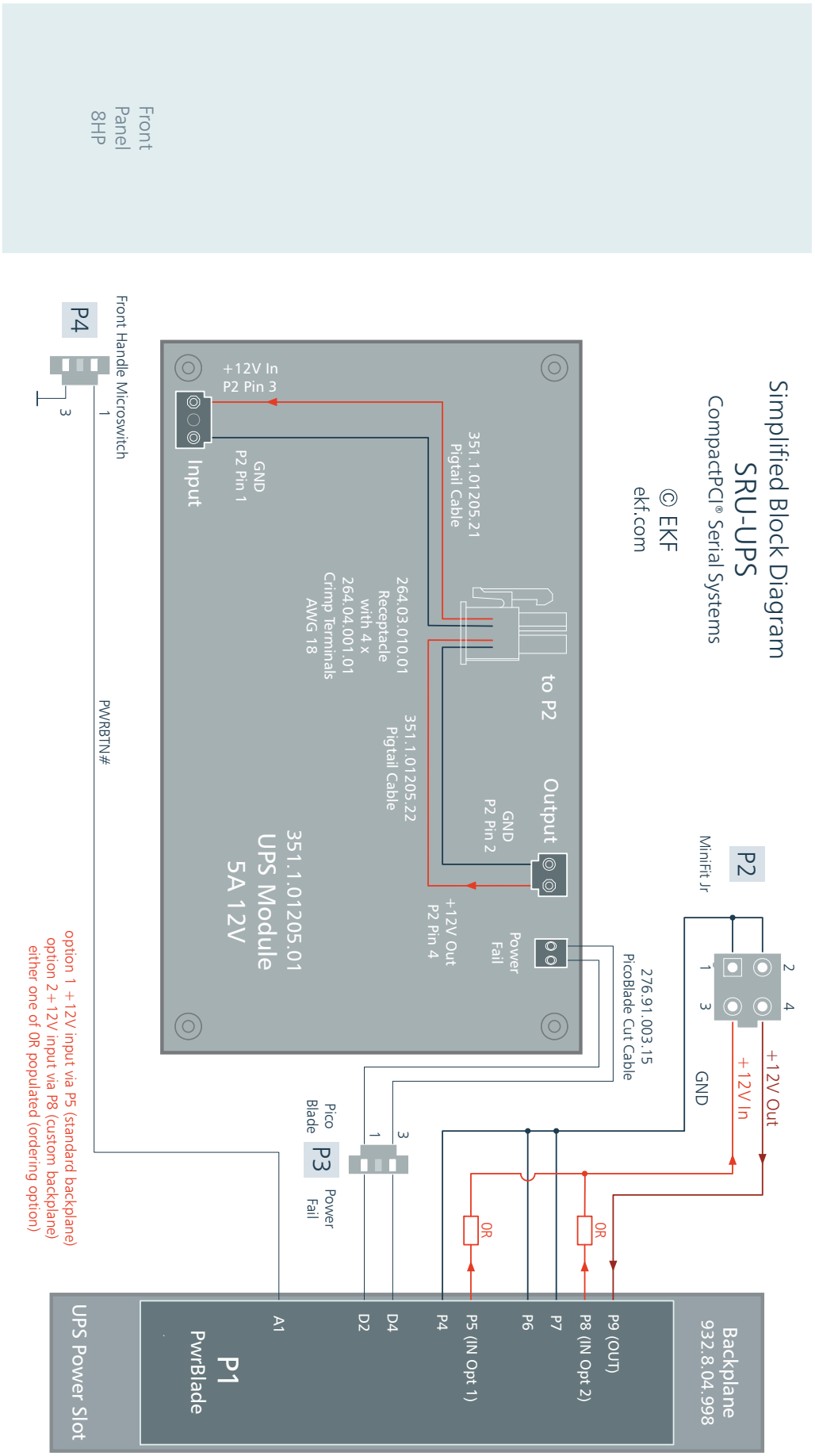
- Long term availability
- Designed & manufactured in Germany
- ISO 9001 certified quality management
- Rugged solution (coating, sealing, underfilling on request)
- RoHS compliant
- Operating temperature -20°C to +70°C
- Storage temperature -20°C to +70°C
- Humidity 10% ... 85% RH non condensing
- Altitude -300m ... +3000m
- Shock 15g 0.33ms, 6g 6ms
- Vibration 1g 5-2000Hz
- MTBF 230.6 years (carrier board, w/o mezzanine card)
- EC Regulatory EN55024, EN55032, EN62368-1



Dual Power Slot CompactPCI® Serial Backplane

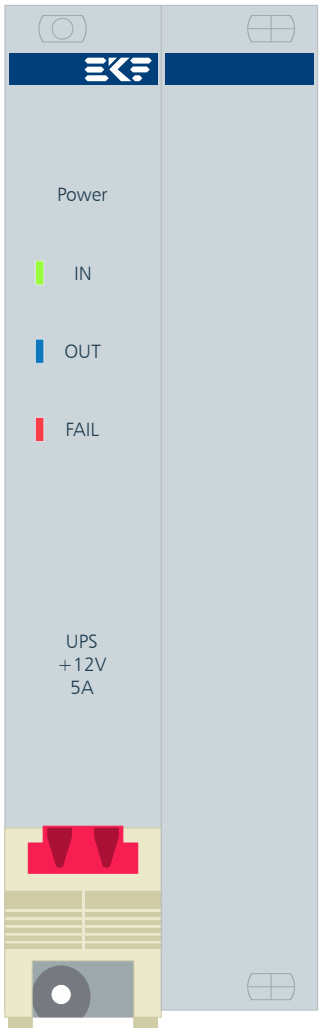
SRS-PSU & SRU-UPS

Block Diagram




Power
IN
OUT
FAIL
SRU-UPS
SRU-0100

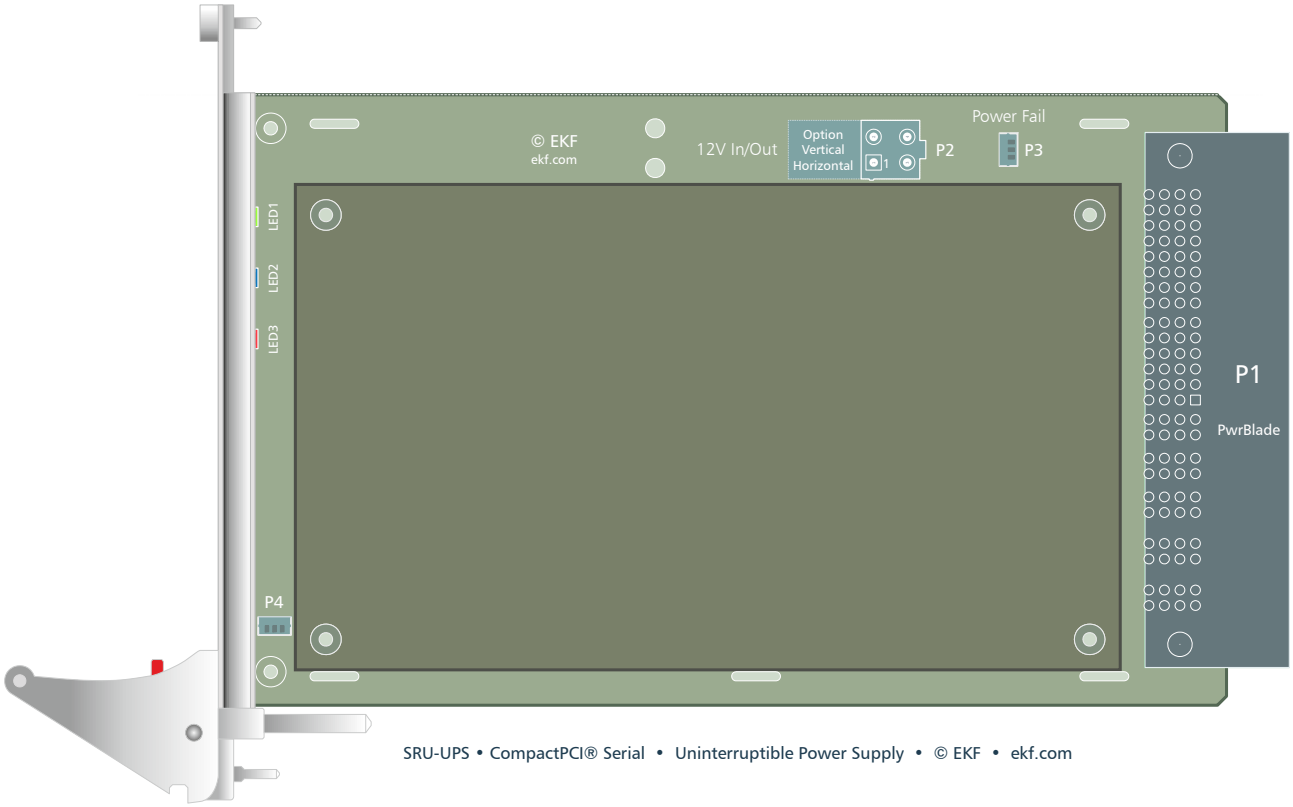
Front Panel



SRU-UPS

LED Indicators	
1	Input power available
2	Output power available
3	Input power failure - backup operation

Component Assembly



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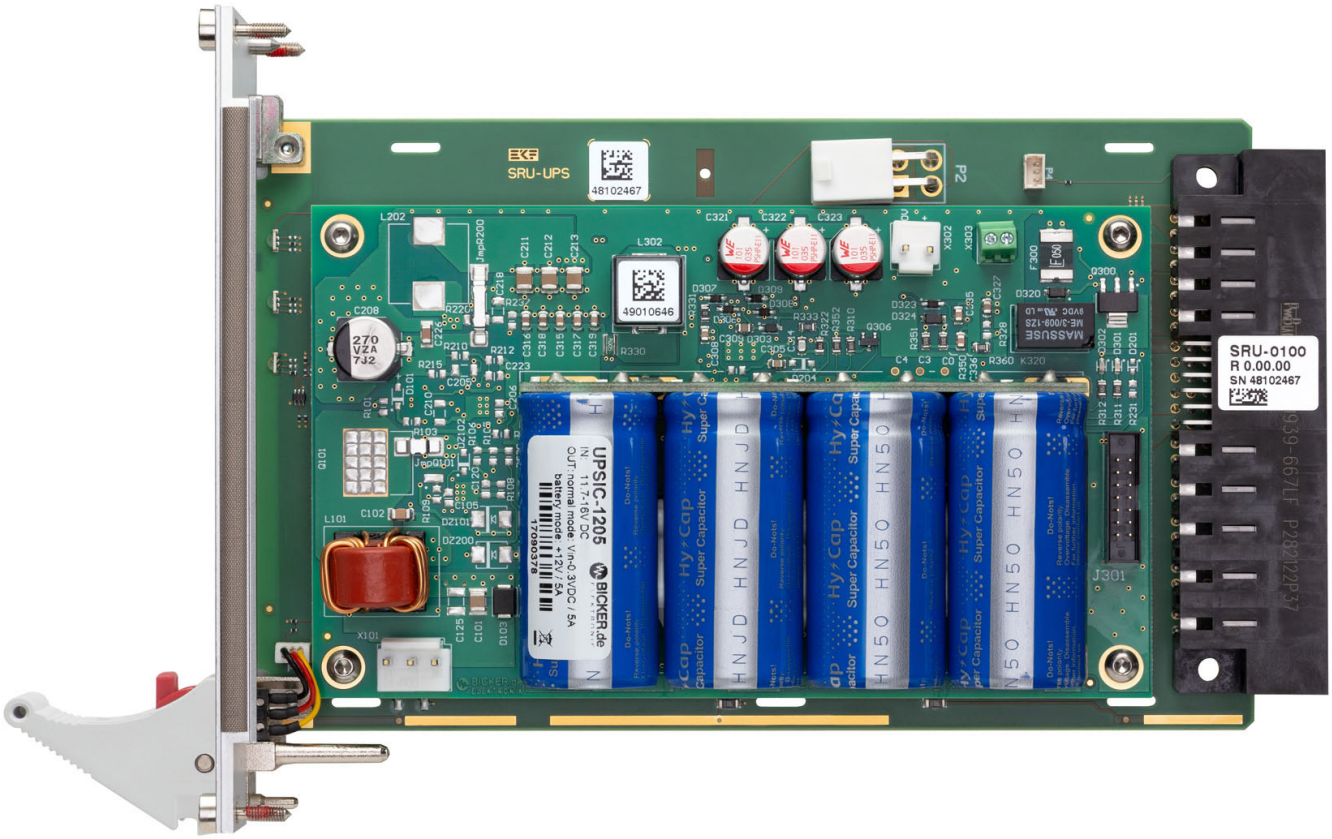
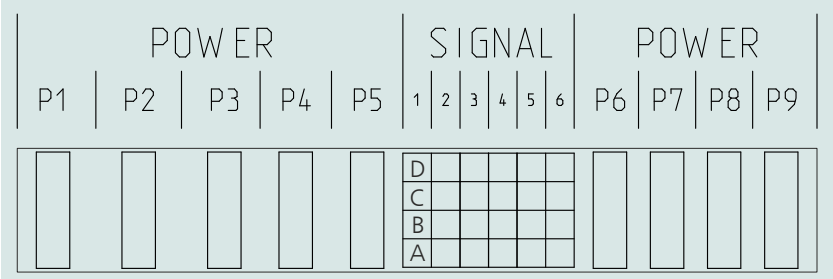


P1 Power Backplane Connector

P1 PwrBlade® Connector EKF Part #250.9.0100.1 • 5+4 Power Blades 24 Signal Pins	
Pin #	**Description**
A1	PWRBTN# output (front handle)
B6	Sig GND
C3	Sig GND
C5	5VSTBY input
C6	5VSTBY input
D2	PWR_FAIL# output
D4	Sig GND
D6	5VSTBY input
P3	NC (PE/frame)
P4	DC GND
P5	+12VDC input (option 1)
P6	DC GND
P7	DC GND
P8	+12VDC input (option 2)
P9	+12VDC output

nc pin positions not shown

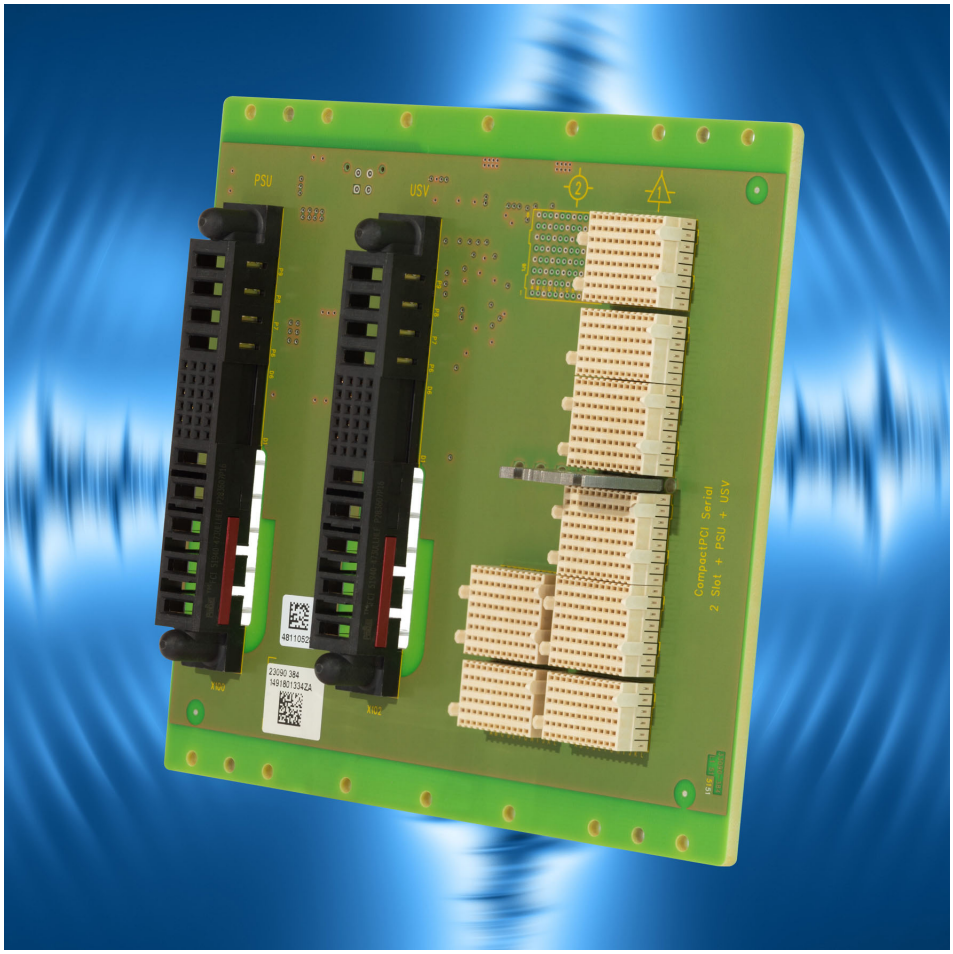


An external +12VDC power supply can be attached to pins P4/P5 (ordering option 1). A custom backplane is required for usage of pin P8 as +12VDC input (ordering option 2). Use only a +12VDC power supply. Higher DC voltages off the limits may either destroy the circuitry or can be even dangerous.

Caution: Although pins P1 & P2 are not connected on the SRU-UPS PCB, do not accidentally attach high voltage AC input here in order to avoid hazard dangerous to life by incidentally getting in touch with these pins.

Ordering Information

For popular SRU-UPS SKUs please refer to
www.ekf.com/liste/liste_21.html#SRU



2nd Power Slot Right for SRU-UPS

Custom Specific Systems

Beyond All Limits:
EKF High Performance Embedded

Industrial Computers Made in Germany

boards. systems. solutions.

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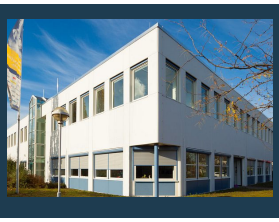

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