

1300Vdc Input, Rugged, 2.4kW DC-DC Converter for Heavy-duty Industrial Applications HVT 2K4-1300/24-4U5 Series

- 1300Vdc nominal input (1500V max.)
- Field-proven design topology
- For rugged industrial applications
- Cooling by high quality built-in fans
- Full electronic protection
- Redundancy diodes or inherent redundancy



This rugged, industrial quality power converter utilizes field proven technology to generate the required output power. The unit is built with one FHD 3000 and two JHI 1500 internal modules which are connected parallel via redundancy diodes. The input and output are filtered for low noise. High quality built-in fans provide sufficient airflow for operation within the specified temperature range without de-rating. The fans draw air into the unit, and exhaust at the terminal side of the unit. Conformal coating provides protection against humidity and airborne contaminants. Full electronic protection, low component count, large design headroom, and the exclusive use of components with established reliability contribute to a high MTBF. The unit is manufactured at our plant under strict quality control.

SPECIFICATIONS

Input Voltage

1300Vdc nominal
1000-1500Vdc operating range
Input current: 3.6A max
Other input range on request

Input Protection

Inrush current limiting
Varistors
Reverse polarity protection (non-destructive)
Internal safety fuse
Lower input voltages of less than the specified minimum will not damage the unit.

Isolation

3450Vdc input to chassis
5000Vdc input to output
13 mm spacing
500Vdc output to chassis

Standards

Designed to meet IEC61010-1, UL508C and related standards

EMI

EN55032 Class A with margins

Switching Frequency

55kHz \pm 3kHz

Output Voltage/Current

24Vdc \pm 0.2V, 100A
2400W continuous
Output is floating; either terminal can be grounded
Other outputs on request

Redundancy Diode

Installed internally for separation of the internal modules

Line/Load Regulation

\pm 1.5% combined from 10% load to full load including redundancy diode

Dynamic Response

Max 5% voltage deviation for 10% to 50% load step, with better than 1msec recovery time

Output Ripple/Noise

Better than 60mVrms and 300mVpp (@20MHz BW)

Output Overload Protection

Rectangular current limiting with short-circuit protection
Thermal shutdown with automatic reset in case of insufficient cooling (self-resetting)
Current Limit set to: 106A \pm 5A

Output Overvoltage Protection

Second regulator loop. Second loop completely stable and independent of main regulator loop
OVP setting: 28V \pm 2V

Efficiency

85% at full load, nominal input

Operating Temperature Range

0°C to 50°C for full specification without derating
Extended temperature ranges available on request

Temperature Drift

0.03% per °C over operating temperature range

Cooling

Forced air by two high quality built-in fans.
Fans draw air into the unit

Environmental Protection

Ruggedizing
Conformal coating

Shock/Vibration

IEC 61373 Cat 1 A&B

Humidity

5 – 95% non-condensing

MTBF

105,000 hours @45°C (fans excluded)
Demonstrated MTBF is significantly higher.

Indicators

Green "Output ON" LED on each internal power module, visible through rear cooling slots

Control Input

None
Available as an option

Alarm Outputs

Not installed on standard version

Package/Dimensions (H x W x D)

4U5: 177 x 305 x 419 mm
6.95" x 12" x 16.5"
Mounting holes are clear
Chassis mount with L-brackets

Weight

Approx. 10kg (22 lbs)

Connections

Input: Phoenix HV assembly, TBK 3051-07
Output: Threaded studs M6

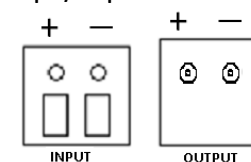
RoHS Compliance

Compliant

Warranty

Two years subject to application within good engineering practice

Input/Output Terminals



The specifications on this data sheet are generic and are subject to change. Enhancements to these specifications can be provided upon request.

OEM of professional quality AC/DC power supplies and battery chargers, DC/DC converters, DC-AC sine-wave inverters, phase and frequency converters, DC-output UPS systems and complete power systems in 19" and 23" racks since 1982. Custom or standard.



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