3000W Rugged, Industrial Quality AC/DC Power Supply
HBC 3K-3U3 Series (230Vac or 300Vdc input)

- Rugged industrial quality
- Single phase 230Vac or 300Vdc input
- Cooling by built in fans
- Full electronic protection
- Field-proven design topology
- Modular redundancy

This rugged, industrial quality AC/DC power supply uses field-proven topology to generate the required output power. The system is built with three HBH 65 internal modules, which have a track-record in numerous heavy-duty applications. A built-in redundancy diode separates the internal modules and also allows for a number of units to be connected in parallel to achieve higher output power or additional redundancy. The output redundancy diode also makes the unit suitable for battery charging applications. Cooling is by two high-quality built-in fans and by conduction via the baseplate which provide sufficient airflow for operation without de-rating to the specified temperature. The fans draw air into the unit. All heat generating components are installed on aluminum heatsink blocks which are thermally connected to the base plate. This also ensures exceptional mechanical ruggedness. Conformal coating provides protection against humidity and airborne contaminants. The input and output are filtered for low noise. 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
230Vac ±15%; 47-63Hz
or 300Vdc (270-350Vdc)
Other DC inputs are also available

Input Protection
Inrush current limiting
Varistors
Internal safety fuses
Lower voltage than the specified minimum input will not damage the unit

Input Isolation
2250VDC input to chassis
4300VDC input to output
8mm spacing
Min. 700Vdc output to chassis, corresponding to output voltage

Standards
Designed to meet EN60950-1 and corresponding standards

EMI
EN 55022 Class A with margins

Switching Frequency
55kHz ±5kHz

Hold Up Time
Minimum 5ms at full load for 5% drop of output voltage at nominal input

Output Voltages
24V/125A, 36V/83, 48V/62A, 56V/53A, 110V/27A, 125V/24A or 250V/12A
Output is floating, either terminal can be grounded
Other outputs on request

Redundancy Diode
Installed for separation of the internal modules

Line/Load Regulation
±1% combined from zero load to full load

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

Output Ripple/Noise
Better than 0.2% RMS or 1% of output voltage peak to peak (20MHz BW)

Overload Protection
Rectangular current limiting with short circuit protection
Thermal shutdown with automatic reset in case of insufficient airflow

Output Over-voltage Protection
Double regulator loop completely stable and independent of main loop

Efficiency
Min 80% at full load depending on input/output configuration

Operating Temperature
0°C to 50°C for full specification
Wider range available on request

Temperature Drift
0.03% per °C over operating temperature range

Cooling
Forced air by two high-quality built-in fans

Environmental Protection
Ruggedizing
Conformal coating
Heavy ruggedizing available on request

Shock/Vibration
IEC61373 Cat 1 A&B

MTBF
90,000 hours @45 °C
(fan excluded)
Demonstrated MTBF is significantly higher.

Indicators
Diagnostic Output ON LED on each internal module visible through the rear perforation.

Control Input
None on standard version
Available on request

Alarm Output
None on standard version
Form C output Fail Alarm on request

Package/Dimensions (H xWx D)
3U3: 132 x 187 x 407 mm
(5.2 x 7.4 x 16") including terminal blocks and fans, excluding mounting brackets

Weight
Approx. 6.5kg (14 lb)

Connections
Input: Terminal block
Output: Terminal block or threaded studs

RoHS Compliance
Compliant

Warranty
Two years subject to application within good engineering practice
Contamination related failures not covered.

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