3kW, Convection cooled, Rugged, Industrial Power Supply in IP54-rated Enclosure
HVI 3KP-V9 Series

- Convection cooling
- 2,500 - 3,500W output power
- 3-Phase AC-input voltage, or DC input
- Packaged in IP54-rated enclosure
- Rugged industrial quality
- Full electronic protection

The rugged, industrial quality AC-DC power supply is designed for convection cooling in vertical configuration. The unit utilizes field proven internal modules to generate the required output power. The modules have a track record in numerous heavy-duty applications. The power supply is packaged in an IP54 enclosure which provides protection from dust, metallic dust and water spray. The internal converter modules are potted with a thermally conductive MIL-grade silicon rubber compound which provides additional protection from moisture and other contaminants, as well as immunity to shock and vibration. Cooling is by heat-sink fins on two sides of the unit. If installed on a heat-sinking surface, cooling is further enhanced. Potting of the internal modules also contributes to the effective cooling of the power supply. 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 N+1 redundancy. Full electronic protection, low component count, large design headroom and the use of components with established reliability result in a high MTBF. The unit is manufactured at our plant under strict quality control. The design is also available in customized versions with higher and lower output power, and different sizes.

SPECIFICATIONS

Input Voltage
400Vac, 3-phase input 47-63Hz or
125Vdc or higher DC-input
PFC-input available
Other voltages available on request

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

Isolation
For 400Vac, 3-phase:
3000Vdc input to chassis
4300Vdc input to output
5600V type test
2250Vdc output to chassis
or corresponding to input/output

Standards
Designed to meet EN60950-1 and corresponding standards

EMI
EN55032 Class A with margins

Switching Frequency
55kHz ±3kHz

Output Voltage
Several output configurations available include 24V, 48V, or 125Vdc.
Custom voltages on request
Output is floating; either terminal can be grounded

Output Separation Diode
Installed internally

Line/Load Regulation
±2% combined from zero 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 0.2% rms or 1% peak-to-peak of the output voltage (20MHz BW)

Output Overload Protection
Rectangular current limiting with short-circuit protection (no hiccup)
Thermal shutdown in case of insufficient cooling (self-resetting)

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

Efficiency
Typically 85% at full load depending on input/output configuration

Operating Temperature Range
0°C to 50°C for full specification
Wider range available as option

Temperature Drift
0.03% per °C over operating temperature range

Cooling
Cooling is by convection via the heatsink on the IP54 enclosure.

Environmental Protection
IP54 enclosure
Internal modules are fully encapsulated with a thermally conductive silicon potting compound with UL94V-0 flammability rating

Shock/Vibration
IEC 61373 Cat 1 A&B

Humidity
5 - 95% non-condensing

MTBF
90,000 hours @ 45°C
Demonstrated MTBF is significantly higher.

Indicators
None

Control Input
None on standard version
Available as option

Alarm Outputs
Not installed
Available as option

Package/Dimensions (H x W x D)
V9: 381 x 208 x 406 mm
15" x 8.2" x 16"
Chassis mount
Mounting holes are clear

Weight
Approx. 24 kg (53 lbs), depending on the variant

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

RoHS Compliance
Compliant

Warranty
Two years subject to application within good engineering practice

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.

ABSOPULSE ELECTRONICS LTD.

ABSOPULSE ELECTRONICS LTD
110 Walgreen Road, Ottawa. Ontario | K0A 1L0 | CANADA
Tel: +1-613-836-3511 | Fax: +1-613-836-7488
E-mail: absopulse@absopulse.com | http://www.absopulse.com

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