300W, IP66-Rated, Rugged Industrial Quality, AC-DC Power Supply with Wide Input Ranges and Convection Cooling by Heatsink Assembly Fins

HBC 65-D3-F6-HSA Series (IP66)

- Packaged in IP66-rated enclosure
- Convection cooling via heatsink fins
- Ruggedized internal module
- Wide selection of input and output voltages
- Full electronic protection
- Field-proven design
- N+1 redundancy available

The rugged industrial quality AC-DC power supplies use field proven topology to generate the required output power. Each unit is enclosed in a robust IP66-rated waterproof, die cast aluminum package. Cooling is achieved by internal conduction to the walls of the IP66 enclosure with additional convection via the outside surface. Cooling is further enhanced by the heatsink assembly block attached to the under-surface of the unit. The heatsink frame has mounting flanges which also allow for mounting on uneven and thermally non-conductive surfaces. The input and output are via sealed cable glands, circular connectors or custom connections. The internal board is ruggedized for immunity to high levels of shock and vibration. An optional built-in redundancy diode allows for parallel and N+1 operation. Full electronic protection, low component count, large design headroom, and the use of components with established reliability contribute to high MTBF. The unit is manufactured at our plant under strict quality control.

SPECIFICATIONS

Input Voltage

115Vac (95 – 132V) 47 - 63Hz 230Vac (190 – 264V) 47 - 63Hz 250Vdc (210 – 290V) 300Vdc (250 – 350V) Other voltages on request

Input Protection

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

Isolation

2250VDC input to chassis 4300VDC input to output 8mm spacing 500VDC output to chassis (min.)

Standards

Designed to meet EN60950-1 and corresponding UL and CSA standards

EMI

EN55032 Class A with margins or as required

Switching Frequency

55kHz ±3kHz

Hold Up Time

Minimum 10ms at full load for 5% drop of output voltage at nominal input

Output Voltage/Current

12Vdc, 24Vdc, 48Vdc or 125Vdc 300W continuous output power Output is floating; either terminal can be grounded Other outputs on request

Redundancy Diode

Not installed. Available as option

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

Less than 1% of output voltage peak to peak or 0.2% RMS 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 Overvoltage Protection

Double regulator loop completely stable and independent of main loop

Efficience

Output voltage dependent. Typically >80% at full load

Operating Temperature Range

-25 °C to 55 °C for full specification Extended temperature ranges available on request

Temperature Drift

0.03% per $\,^{\circ}$ C over operating temperature range

Cooling

Natural convection via the surface of the IP66 enclosure and additional cooling via the heatsink assembly fins

Environmental Protection

IP66 enclosure Internal module: Ruggedized and conformal coated

Shock/Vibration

IEC 61373 Cat 1 A&B

Humidity

5-100% condensing

MTBF

150,000 at 45°C Demonstrated MTBF is significantly higher

Indicators

None

Control Input

None

Alarm Output

Not installed Optional output Fail Alarm

Package/Dimensions (W x H x D)

D3-IP66 module is installed on HSA heatsink fin assembly. Overall dimensions: 160 x 140 x 432 mm 6.3 x 5.53 x 17"

Weight

Approx. 5 kg (11 lb.)

Connections

Internal barrier-type terminal block accessible via sealed cable glands.
Optional connectors instead of cable glands

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.

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