# 300W, IP66-Rated, Rugged Industrial Quality, DC-DC Converter BAP 65-D3 Series (IP66)

- Packaged in waterproof IP66 enclosure
- Internal module ruggedized and conformal coated
- Full electronic protection
- Field-proven designs
- N+1 redundancy available



The rugged industrial quality DC-DC converters utilize field proven topology to generate the required output power. The units are packaged in rugged, waterproof, die cast aluminum IP66 enclosures. The input and output are via sealed cable glands, circular connectors or custom connections. The internal boards are ruggedized and conformal coated for immunity to high levels of shock and vibration. Cooling is by internal conduction to the walls of the IP66 enclosure and by baseplate to an external chassis or cabinet wall, with additional convection via the outside surface. If installed on a heat-sinking surface, cooling is further enhanced and the converters achieve higher output power. 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**

24Vdc (21-29V) 48Vdc (42-56V) 125Vd (105-145V) For 12Vdc and other input voltages, consult factory

#### Input Protection

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

## Isolation

According to input voltage minimum of: 1000VDC input to chassis, 1500VDC input to output, 500VDC output to chassis

## Standards

Designed to meet EN60950-1 and related standards

#### EMI

EN 55022 Class A with margins or as required

#### **Switching Frequency**

55KHz ±3kHz

# **Output Voltage**

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

#### **Redundancy Diode**

None Installed on request

#### 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

#### Efficiency

Input/output voltage dependent. Typically 85% 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  $^{\circ}\,\text{C}$  over operating temperature range

#### Cooling

Conduction to customer heat-sink or chassis and by additional natural convection via the surface of the IP66 enclosure

## **Environmental Protection**

IP66 enclosure Internal module: Ruggedized and conformal coated Potting of the internal module is also available

## 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 Optional

#### **Alarm Output**

Not installed Optional output Fail Alarm

#### Package/Dimensions (L x W x H)

D3: 360 x 160 x 90 mm 14.2" x 6.3" x 3.5" D3 with baseplate: 406 x 160 x 94 mm (16" x 6.3" x 3.7")

## Weight

Approx. 4.6 kg (10 lb)

## Connections

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

# **RoHS Compliance**

Fully compliant

#### Warranty

Two years subject to application within good engineering practice

