

**Model:** BAP 4K5-80/24-3U7-U4980  
**COSD:** XXXX  
**Summary description:** 4500W, Industrial Quality DC/DC Converter  
 80Vdc to 24Vdc/187A  
**Customer Name:** Thiele KG/Germany  
**Customer Part Number:** Same as above



**Preliminary**

**Product description:**

This rugged, industrial quality power converter utilizes field proven technology to generate the required output power. The unit is built with six BAP65F internal modules, which are connected parallel via redundancy diodes. This modular construction also provides inherent redundancy; the failure of one internal module only causes a drop in output power while the unit remains operational. 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. 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. Full electronic protection, low component count, large design headrooms, 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.

**Special Features:** Conformal coating, Harsh environment and mounted on rail vehicle

**SPECIFICATIONS**

**Input Voltage**

80Vdc nominal  
 70-90Vdc operating range  
 Input current: 77A max

**Input Protection**

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

**Isolation**

1500Vdc input to chassis  
 2250Vdc input to output  
 1000Vdc output to chassis

**Standards**

Designed to meet EN62368-1 and corresponding standards

**EMI**

EN55032 Class A with margins

**Switching Frequency**

55kHz +/- 3kHz

**Output Voltage/Current**

24Vdc ± 0.3V/187A  
 Output is floating, either terminal can be grounded

**Redundancy Diode**

Installed internally for separation of the internal modules

**Line/Load Regulation**

+/- 1% 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 70mVrms and 350mVpp (@20MHz BW)

**Output Overload Protection**

Rectangular current limiting with short-circuit protection  
 Thermal shutdown with automatic reset in case of insufficient cooling  
 Current Limit set to: 192A ± 5A

**Output Overvoltage Protection**

Double regulator loop. Second loop completely stable and independent of main regulator loop  
 OVP setting: 28V ± 3V

**Efficiency**

85% at full load

**Operating Temperature Range**

0°C to +50°C for full specification

**Temperature Drift**

0.03% per °C over operating temperature range

**Cooling**

By built-in high quality fans

**Environmental Protection**

Basic ruggedizing  
 Conformal coating

**Shock/Vibration**

IEC 61373 Cat 1 A&B

**Humidity**

5-95% non-condensing

**MTBF**

160,000 hours @ 45°C per internal module (Fans excluded)

**Indicators**

Green OUTPUT ON LED installed on each internal module visible through the cooling slots

**Control Input**

None

**Alarm**

Not installed

**Package / Dimensions**

3U7: 432 x 132 x 407mm (17" x 5.2" x 16")  
 Mounting holes are clear

**Weight**

12kg (26 lbs.)

**Connections**


Input: Terminal block Phoenix 125A  
 Output: Threaded studs dual M6

**RoHS Compliance**

Compliant

**Warranty**

Two years subject to application with good engineering practice  
 Contamination related failures and shipping cost excluded

Drawn by TS/kv	Date Dec 15, 2023
Checked by TS	Drawing No./ Rev. SCD U4980A
Approved by TS	

This document is the property of Absopulse Electronics Ltd. Its contents are proprietary and may neither be copied, reproduced, nor its contents disclosed to others without prior written agreement from Absopulse Electronics Ltd.