



MPC-3000 DC/DC Converter

The MPC-3000 is a high-efficiency isolated DC/DC converter that combines next-generation components with advanced digital control technology. It features FPGA-based regulation to deliver fast, precise voltage control and optimal performance across a wide range of operating conditions.

Designed for versatility, the MPC-3000 supports passive cooling for rugged military environments or active cooling with an external fan for higher power applications, adapting seamlessly to different system requirements.

When connected, the output battery supports high peak current delivery as needed. The integrated microcontroller interfaces with the battery's BMS over the CAN protocol, providing smart power management and ensuring safe, reliable operation.

Built for demanding applications, the MPC-3000 operates efficiently within a wide temperature range and includes comprehensive protection features, making it an ideal choice for critical power solutions requiring high reliability and flexibility.

APPLICATIONS

- Military Applications (COTS)
- All mobile MIL applications as tanks and trucks
- Shelters and other building equipment
- Demanding environments

FEATURES

- 3000W Power delivery
- MIL STD 461G
- Ruggedized parts of MIL 810
- Filtered input and output
- Full electronic protection
- Parts of MIL 1275
- Programmable output
- IP67 protected
- Environmentally Tolerant
- Vibration resistant
- Operating Temperature -40 to +70°C
- Compact size, light weight
- Filtered input and output



Versatile



BMS
Connection



Integrated
Microcontroller



Light weight,
compact size



97% Efficiency



Isolated DC/DC
Converter

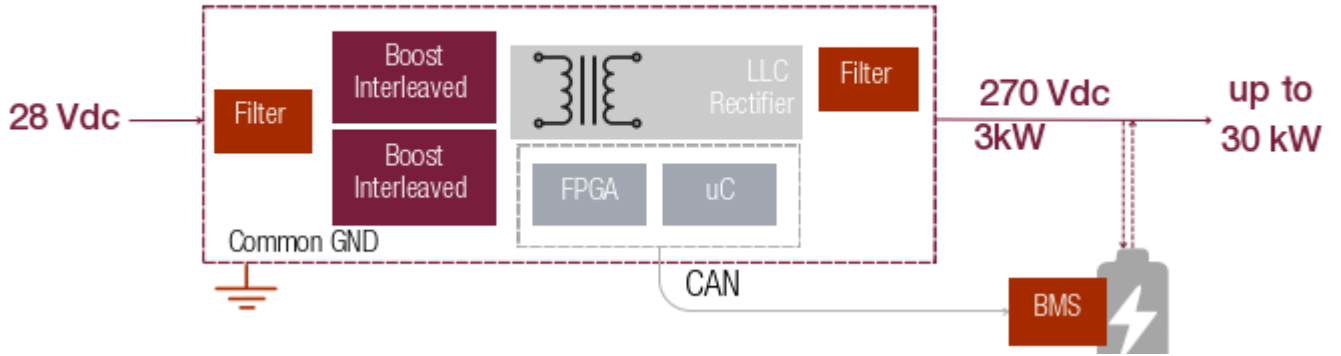


Digital Control

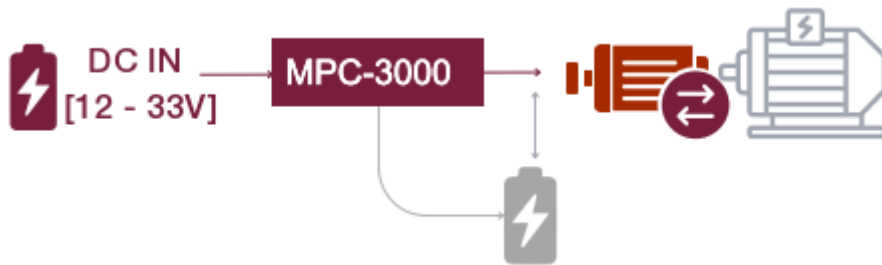


Active & Passiv
Cooling Option

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Block diagram of the modular 3kW Converter module



Applications Example

The MPC-3000 converter efficiently powers a motor driver at 270V from a 28V battery source. To meet the high peak current demands during engine start-up, an external battery can be connected at the output for enhanced power delivery (e.g :10kW - 35A for 30s or 30kW - 100A for 10s)

SPECIFICATIONS

DC Input	
Nominal Voltage	28 Vdc (16-32 V) (Other input voltages available on request)
Nominal current (at 3000 W output)	160 A
Under-voltage protection turn OFF	21 V (Adjustable)
Under-voltage protection turn ON	25 V (Adjustable)
Under-voltage protection hysteresis	4 V (Minimum 2 V is recommended)
Revers polarity protection	Yes
DC Output	
Nominal Voltage	270Vdc (240 - 300 V Programmable) (Other output voltages available on request)
Nominal Current	12.5A
Power	3000W
Efficiency	97%
General	
Operating Temperature	-40° C to +70° C
Operating relative humidity	0 - 95 % Non-condensing
Storage Temperature	-50° C to +70° C
Storage relative humidity	0 - 95 % Non-condensing
MTBF	200 000 h (MIL-217IF)
Shock	Designed to withstand according to MIL-STD-810H, Method 516.8, Procedure I according following levels: Peak acceleration: 40 g Shock duration: 11 ms
Vibration	Designed to withstand according to ETSI EN 300 019-1-5 Class 5M3 according Method 514.6D Procedure I, Ground Vehicle Category 20 Wheeled/Tracked/Trailer from MIL-STD-810H
Cooling	Active & Passive cooling options available
Safety & EMC	
Electrical Safety	IEC/EN62368-1
EMC	MIL-STD-461G (CE102, RE102, CS101, CS114, CS115, CS116, RS103) / CISPR22 Class B / EN 61000-4-2 / MIL-STD-1275E
Dimensions & Mass	
Converter module	150 x 200 x 300mm
Weight	6.5 kg
IP Level	IP67

