

Bidirectional DC/DC Converters



EPC

EPC systems conform the new generation of bidirectional DC/DC Converters launched by **epic power**. New EPC's (Epic Power Converters) are suitable for a huge number of applications ranging from industrial ones to applications in the field of renewable energies.

With a wide range of voltage levels in both sides, the EPC's are capable to manage power in both directions. As an ideal application you can connect the low side voltage to batteries or ultracapacitors to feed any drive (VVVF) directly through the DC link. This allows the system to continue in operation in case of blackout. It also allows for off-grid applications where there is no three-phase mains available or for example in automatic warehouses when the platforms are moving off-grid.



Bidirectional DC/DC Converters

Enabling new functionalities:

- Supply any motor drive from batteries.
- Use renewable sources of energy
- Keep system energized in case of blackout
- Save and store energy, save money

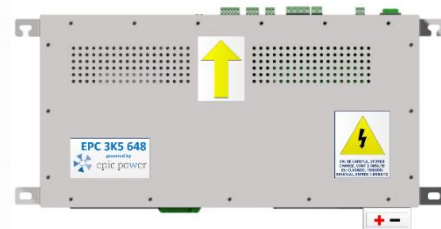
Our Company:

Design development and manufacturing very efficient high power converters since 2009.

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ADVANTAGES AND FEATURES

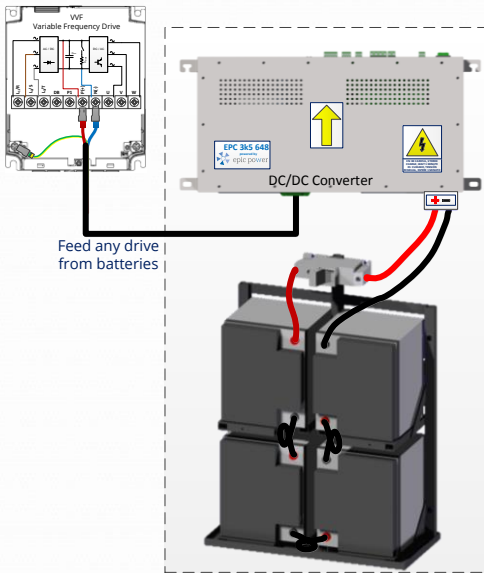
- Ultra-high efficiency, achieved with silicon carbide transistor technology
- Scalable up to your requirements
- Galvanic isolation
- It can reach maximum reliability of the process maintaining the DC link voltage in case of blackout
- Soft pre-charge of the DC link. Suitable to Switch ON and OFF the drive as many times as you want in order to save energy and life expectancy of the inverter.
- It can operate autonomously changing power direction if necessary to stabilize either input or output voltage without stopping voltage regulation.
- CAN communication can be used to implement voltage or current control and transmit relevant measurements of operation parameters (voltage, power, current, temperatures, etc.)
- Customized versions available upon request



RANGE OF PRODUCTS TECHNICAL INFORMATION

| | EPC-2k2-324 | EPC-2k2-624 | EPC-3k5-648 | EPC-5k5-648 |
|----------------------------------|--|----------------|----------------|----------------|
| Low side: Input/ Output Voltage | 21 – 29 Vdc | 21 – 29 Vdc | 42 – 58 Vdc | 42 – 58 Vdc |
| High side: Input/ Output Voltage | 330Vdc | 600Vdc | 600Vdc | 600Vdc |
| | (up to 450Vdc) | (up to 800Vdc) | (up to 800Vdc) | (up to 800Vdc) |
| Nominal Power | 2.2 kW | 2.2 kW | 3.5 kW | 5.5 kW |
| Maximum Power | 2.6 kW | 2.6 kW | 4.2 kW | 6.5 kW |
| Scalability | Up to your requirements (parallelizable) | | | |
| Efficiency | >98% | | | |

APPLICATIONS



- **SUPPLY ANY DRIVE FROM BATTERIES.**
 - o Enables off-grid applications
 - o System continues in operation even in case of blackout
- **ENERGY RECOVERY SYSTEM.**
 - o With lift platforms, elevators, cranes, the system can be used to recover automatically the braking energy storing the energy in batteries, ultracapacitors, hydrogen cells, etc. Later this energy can be returned to the system and reused.



- **SHIPS CO-POWERED WITH BATTERIES.**

- o EPC's is the key connection between any energy storage system and the drive.
- o In order to reduce the consumption / emissions in the movements in port (according to environmental regulations) or simply to make a hybrid boat

- **REDUCE PEAK POWER CONSUMPTION.**

- o EPC's can provide peak power consumption during short intervals in some applications in order to reduce the maximum peak contracted with the energy company

- **EASY USE OF RENEWABLE SOURCES OF ENERGY.**

- o Different supply sources (solar, wind, etc.) can be connected to have several generator systems.



OUR COMPANY

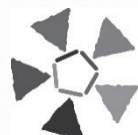


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- ❖ epic power is a key power electronics partner for energy efficiency and energy storage solutions
- ❖ Flexible systems
- ❖ Customized designs
- ❖ Experienced engineering support



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