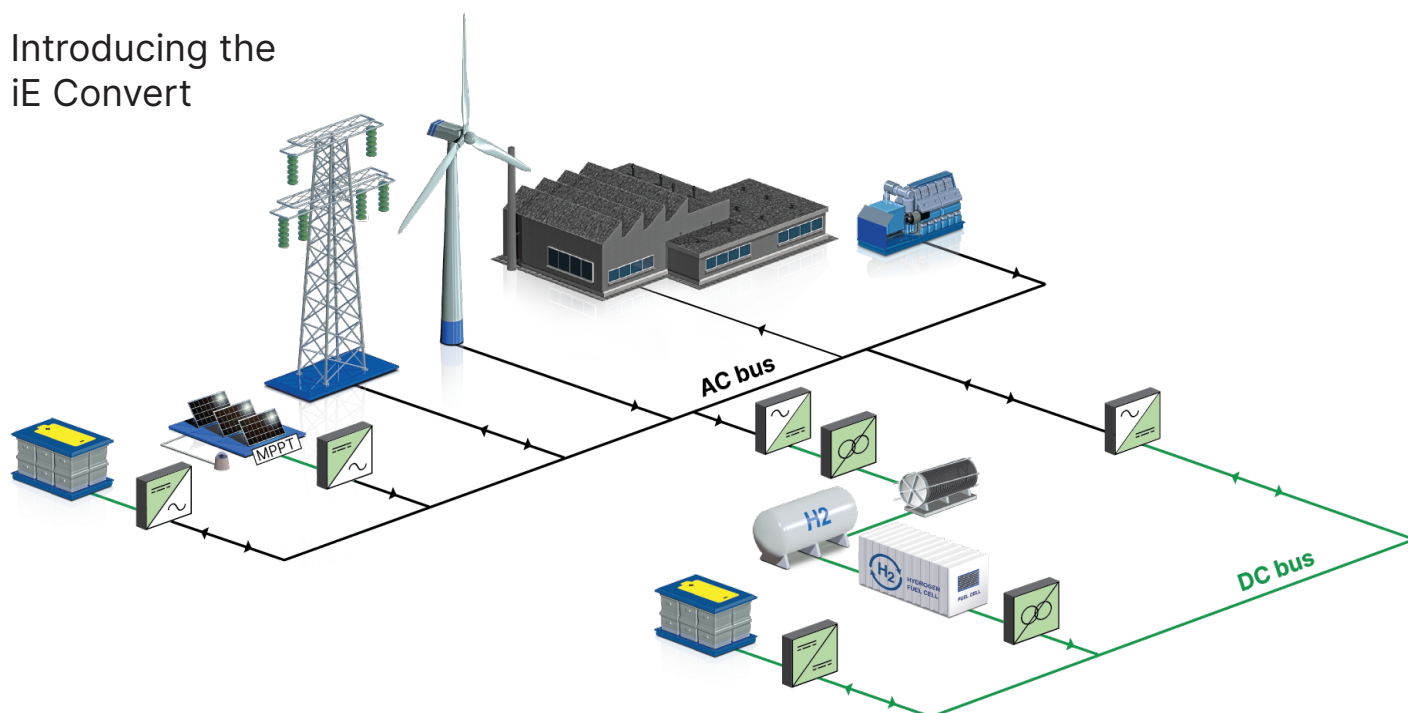


iE Convert Land

Introducing the
iE Convert



For almost 100 years, DEIF has provided reliable products to industry. DEIF's expertise includes power and energy management, advanced controllers with grid code protections, and cybersecurity. DEIF provides customer support with a global presence.

We have partnered with Wolfspeed to create power converters based on the latest silicon carbide technology. Our collaboration with Wolfspeed ensures a steady supply of reliable silicon carbide MOSFETs.

Why silicon carbide?

Silicon carbide (SiC) operates at very high switching frequency. The high switching frequency leads to smaller filters, and there is low energy loss across a wide load range. Thanks to the smaller filters, SiC power converters are smaller and lighter than similar products based on IGBTs.

99% Lower energy losses mean a higher efficiency, which adds even more to the fuel savings. Lower losses also means less cooling demand.

 SiC technology has an almost flat efficiency curve. This means energy savings at all load factors (rather than at one sweet spot).

 Faster switching means more accurate energy transformation. Our converters deliver higher quality power with minimal harmonic distortion.

 SiC MOSFETs can withstand a junction temperature up to 200 °C, which is much higher than IGBTs. This thermal performance enables operation at sustained higher loads and flexibility in handling peak loads.

Applications

AC/DC Grid

Grid-connected and/or island.

Examples: Charging/discharging a battery bank, exporting power to the grid, production of green hydrogen.

DC/DC Buck-boost

To step up or step-down the DC bus voltage. This includes charging and discharging a battery.

Example: Boosting the voltage level from a solar charger.

DC//DC Galvanic isolation

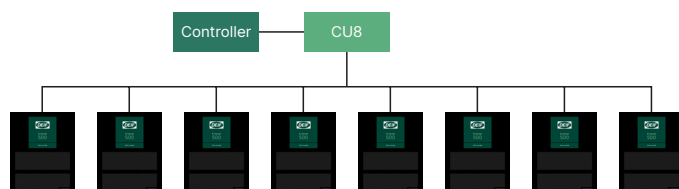
Isolates a power source from rest of the system, to prevent stray currents. This is available with buck-boost and battery charging-discharging.

Example: Connect a fuel cell to a DC bus.

Applications and specifications

How it works

iE Convert is easy to install and simple to use. The platform uses modular design, with three form factors. Up to eight power blocks can run in parallel and synchronise. As a result, the iE Convert offers a wide range of power conversion capacity, from 150 kVA to 8 MVA.



You can connect the iE Convert controller to a DEIF iE controller for seamless power/energy management. For PLC integration, you can use the CODESYS platform from DEIF.

Power block	Power	400 V AC	690 V AC
iE Convert 150	150 kVA	217 A*	126 A
iE Convert 500	500 kVA	419 A	419 A
iE Convert 1000	1000 kVA	837 A	837 A

Note: * Through a dedicated module equipped with 1200 V MOSFETs.

Specifications

Power losses: 1 to 2 %

Switching speed: 24 to 75 kHz

AC nominal voltage: Up to 850 V AC, at 50 or 60 Hz, and up to 400 Hz for special cases (subject to derating)

DC nominal voltage: 750, 1100, or 1500 V DC

Protections: Voltage, current, and fault monitoring

Supply: 24 V DC, 5 to 10 A

Housing: IP2X, or none (IP00)

Ambient temperature: -40 to 60 °C

Coolant temperature: 5 to 60 °C

Coolant type: Antifrogen N-water mix: 25:75

Humidity: 95 % RH, non-condensing

Altitude: Up to 4000 m

Communication: Modbus interface, EtherCAT

Standards and approvals: UL, Cybersecurity, CE, RoHS



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Land application guide

Hardware platforms

iE Convert 150



Working AC voltages

208 V to 480 V, or 300 to 690 V

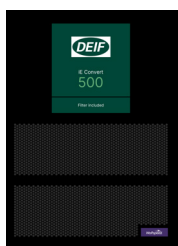
Maximum DC voltage

850 V, or 1500 V

Frequency

50 Hz, 60 Hz, or 400 Hz

iE Convert 500



Working AC voltages

300 V to 690 V

Maximum DC voltage

1350 V

Frequency

50 Hz, 60 Hz, or 400 Hz

iE Convert 1000



Working AC voltages

300 V to 850 V

Maximum DC voltage

1500 V

Frequency

50 Hz, 60 Hz, or 400 Hz

Applications



AC/DC
Grid



DC/AC
Drive



DC/DC
Buck-boost



DC//DC
Galvanic
isolation

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