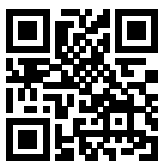# SINAMICS DCP

The compact DC-DC converter
for industrial and smart grid applications

**The benefits of
SINAMICS DCP
at a glance**

SINAMICS DCP:
Optimal performance for industry and smart grids

In the DC-DC converter SINAMICS DCP, we've combined our DC technology expertise with the advantages of our proven SINAMICS family.

Ideal for energy supply

SINAMICS DCP (DC power converter) is a compact DC-DC converter for industrial applications. As a standalone device, it combines a control unit, power electronics, and a filter in an extremely stable housing.

Its technology can process up to 1,000 V at both ends. This means, for example, that batteries and super capacitors can be optimally adapted to a drive train's DC link.

Integrated protective mechanisms prevent the connected batteries from being overcharged or deep-charged.
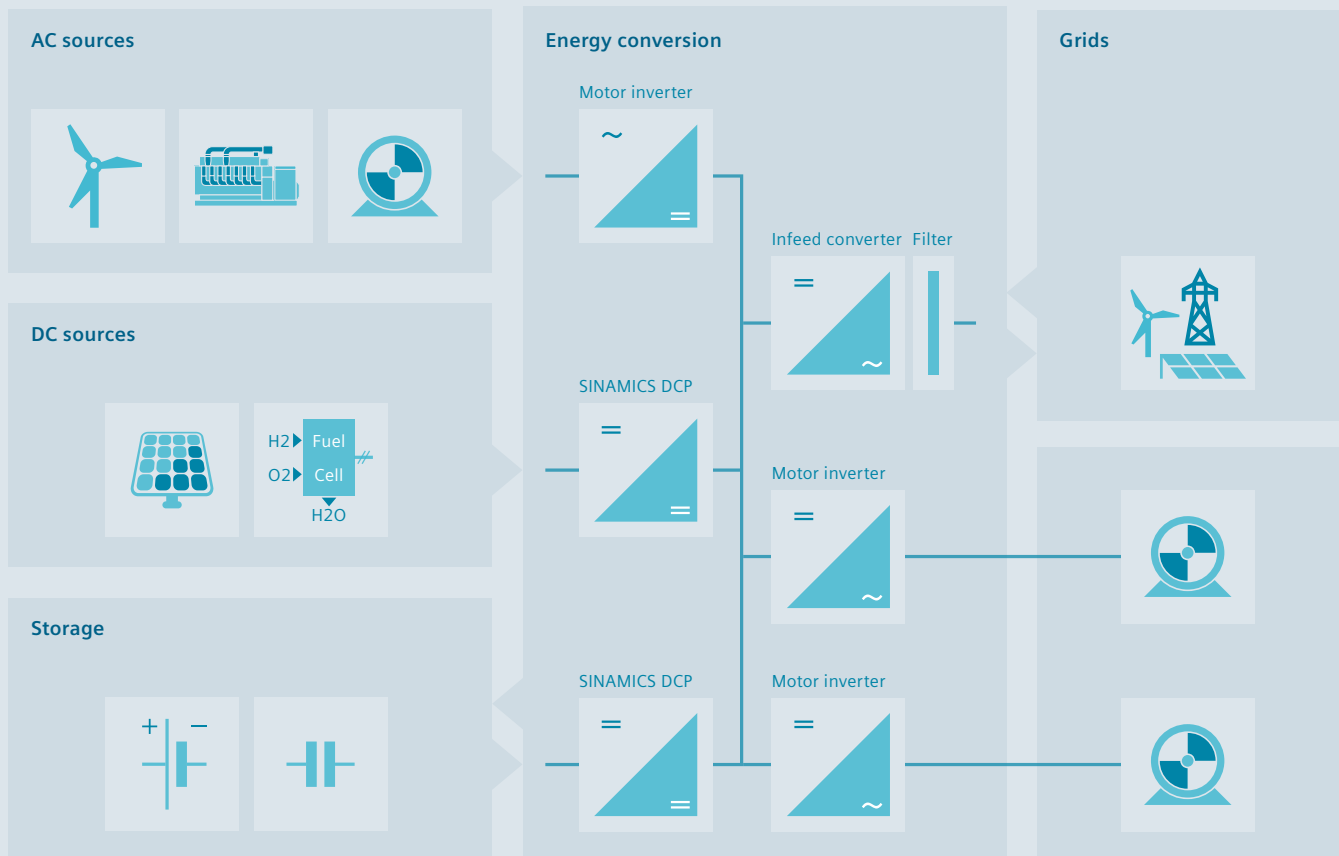
To increase efficiency, photovoltaic energy can also be fed into the drive train. The requisite MPP tracker is already built-in.

A variety of interfaces are available for integration in industrial networks. The PROFIBUS interface is standard.

SINAMICS DCP is commissioned just like other SINAMICS devices. A basic operator panel is installed for service purposes.

Flexible integration
and a wide range of possible combinations

AC sources

Energy conversion

Motor inverter

Grids

DC sources

H2 ▶ Fuel
O2 ▶ Cell
H2O

SINAMICS DCP

Infeed converter   Filter

Motor inverter

Storage

SINAMICS DCP   Motor inverter

Possible connection versions

Features and benefits
of SINAMICS DCP at a glance

- Low current and voltage ripple, thanks to high switching frequency in the power unit
- Wide voltage range
- Bidirectional operation
- Standalone operation using an integrated control unit
- Reactors integrated in the device
- Scalable power
- Small footprint

- Flexible integration into industrial networks via communication interfaces like PROFINET
- Expandable using additional SINAMICS components, like for example Active Line Modules
- Significant increase in efficiency, thanks to fans with a parameterizable switch-on temperature
- Parameterization protected from unauthorized access, thanks to built-in knowledge protection

Technical data:
Overview

	30 kW DCP	120 kW DCP
Voltage range	0 V – 1,000 V DC	0 V – 1,000 V DC
Current	Constant 50 A to 600 V; above that, power limited to 800 V	Constant 200 A to 600 V; above that, power limited to 800 V
Power	30 kW at 600 V	120 kW at 600 V
Current ripple	< 3%	
Efficiency 30 kW/120 kW	> 98%	
Temperature range	0° C – 40° C up to 55° C with derating	
Installation altitude	Up to 2,000 m without derating, up to 5,000 m with current/voltage derating	
Communication interfaces	PROFIBUS, PROFINET, EtherNet/IP, Modbus TCP, DriveCLiQ with OALINK connection to CU320-2	
Control type	Current, voltage, and power controlled	
Control unit	Integrated	
Electrical isolation	No	
Weight	Approx. 38 kg	Approx. 118 kg
Dimensions	600 mm x 155 mm x 545 mm (including mounting)	900 mm x 205 mm x 500 mm
Degree of protection	IP20	IP00
Certifications/approvals	CE, cURus, EAC, KC and RCM	
Power connections	Only top or only bottom, or split for simple connection in cabinet	

Software and hardware features

- Use as adjustable voltage source by voltage regulation
- Brief provision of power peaks, thanks to an overload capacity
- Highest process reliability by maintaining the DC link voltage
- Optimized efficiency, thanks to a temperature-controlled fan (DCP 120 kW only)
- Optimal adaptation to the battery when charging is based on a parameterizable load characteristic
- Power optimization of a PV array when using an MPPT (maximum power point tracker)
- No-load voltage-limiting of a PV array
- Improved accuracy of current control by feeding in an externally measured current's actual value
- Sustained load capacity with 120 percent of the rated current in the appropriate environmental conditions

SINAMICS DCP
for industrial applications

Using braking energy

With SINAMICS DCP, braking energy can be provided from an energy storage system; it can then be used, for example, by cranes for the next hoisting operation.

Coupling DC buses

DC buses at different voltage levels can be intelligently coupled using SINAMICS DCP. As a result, the infeed can be implemented at a significantly lower cost.

Peak-shaving

Grid operators have to pay high tariffs for a peak load. Based on SINAMICS DCP, energy storage systems can be implemented that briefly provide a high overload so that this additional cost can be avoided.

Test stands

SINAMICS DCP supplies a reliably constant DC voltage for testing vehicle converters, which makes it possible to charge and discharge both batteries and super capacitors. A parameterizable load characteristic is integrated.

SINAMICS DCP
for energy management

ESS (energy storage system)

Using several SINAMICS DCPs, battery modules can be coupled to form an energy storage system that injects its total energy into a power, industrial, or island grid via a common grid inverter.

SINAMICS DCP
in the marine sector

Battery-powered ships

Regulations for controlling air pollution are becoming increasingly strict in ports and harbors. On emission-free, battery-powered ships, SINAMICS DCP is the link between the energy storage system and the drive system.

SINAMICS DCP
for the eCar infrastructure

External charging for electric vehicles and buses

DCP can be used to charge and discharge vehicle batteries in a stationary infrastructure.

For more information about SINAMICS DCP, visit

www.siemens.com/sinamics-dcp

You can place an electronic order directly
via the Internet by visiting the Industry Mall

www.siemens.com/automation/mall