ENGINEERING
TOMORROW

Fact sheet | High-power charging systems

Need **intelligent** and **future-proof EV charging?**

Vehicle charging stations are increasing in size and serve more diverse charging power needs. Trucks, buses, vans and cars have different charging power needs, and therefore charging systems benefit from a flexible and modular concept adaptable to them all.

With focus on optimal total cost of ownership (TCO), Danfoss power converters offer the highest efficiency and long lifetime, as well as meeting the requirements of the future MCS standard. A single investment in electric vehicle supply equipment (EVSE) can therefore prepare you completely for fast-charging requirements of today and also into the future. By combining Danfoss iC7-Hybrid Grid Converter and iC7-Hybrid Isolated DC/DC Converter, you are equipped for full V2G and integration of BESS or PV for high efficiency and cost optimization. With bi-directionality in place, new business opportunities become possible in charging applications.

Features of iC7-Hybrid Isolated DC/DC Converter	
DC-bus technology	System design, based on grid connection and DC-power needs
Bi-directional	Enable V2G/V/L/X and integrate ESS
Cybersecure-by-design	Resistant to unauthorized access
Wide DC voltage output 200-1300 VDC	Flexibility by integrated MCS and CCS standard
Charge what you connect	Charging solutions for depot charging systems and standalone MCS chargers

HIGHLIGHTS

- Compliant with CCS2 and MCS standards
- 100% bi-directional
- Scalable grid and DC side
- Integrated ESS and PV as option
- High efficiency for low TCO
- ISO 9001-certified and IATF 16959-compliant
- Simulation reduces time to market

100%
bi-directional power conversion

Learn more about iC7-Hybrid

iC7.danfoss.com iC7

Depot charging systems

iC7-Hybrid air-cooled system modules for depot charging systems

Design depot charging systems with iC7-Hybrid Grid Converter and iC7-Hybrid Isolated DC/DC Converter units, to optimize both the grid converter power size and the DC charging output. Scale seamlessly from depot charging to high-power charging, supporting **CCS**, **MCS**, and **V2X** applications.

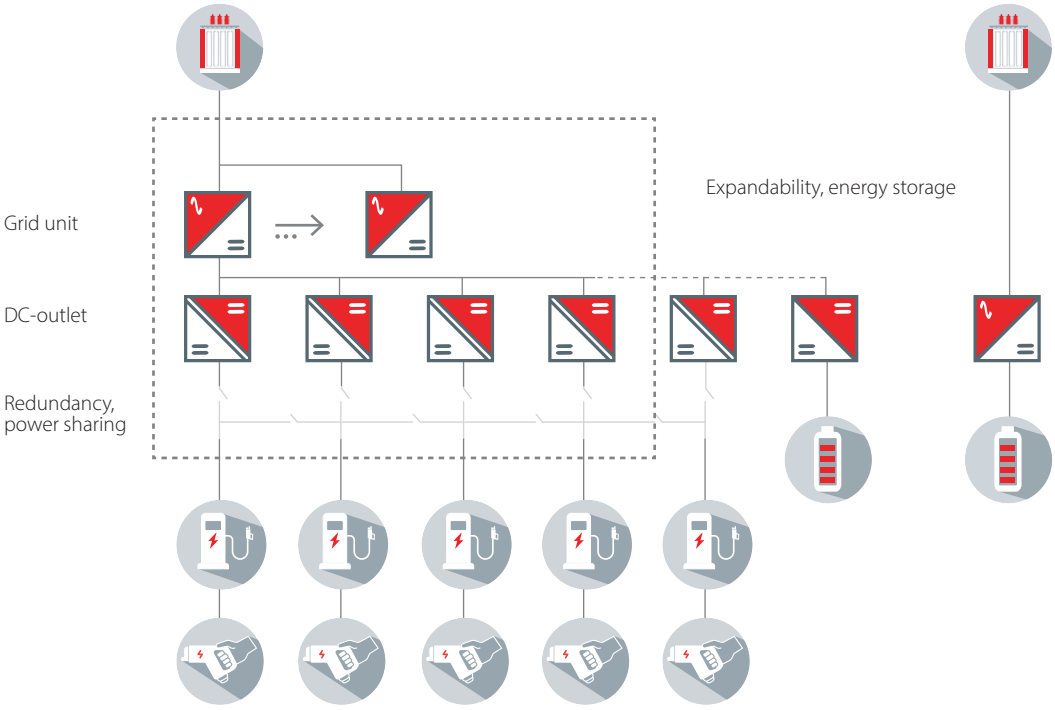
Total cost of ownership

Integrate BESS, PV, or any DC source with our DC-bus technology and standard grid converters. Connecting DC sources directly to the DC-bus maximizes efficiency and lowers total cost of ownership (TCO). With bidirectional capability, fleet owners can tap into the cheapest available energy, strengthening the business case. This approach accelerates high-power charging readiness and reduces the need for costly grid connections.

DC fast charging system overview
DC-coupled

Depot/hub charging

- 200-1300 VDC
- Depot charging – low power
- Integrated galvanic isolation
- Bidirectional / low harmonics
- Storage for peak shaving
- High V2X efficiency



Megawatt charging systems (MCS)

iC7-Hybrid liquid-cooled system modules for megawatt charging systems

With ever-increasing power demands in EV charging, Danfoss iC7-Hybrid Grid Converter and iC7-Hybrid Isolated DC/DC Converter offer the flexibility you need to step forward in megawatt charging solutions. Our iC7 power converters offer compact design and low harmonic 690 VAC supply voltage, reducing the number of input cables.

Focus on truck charging

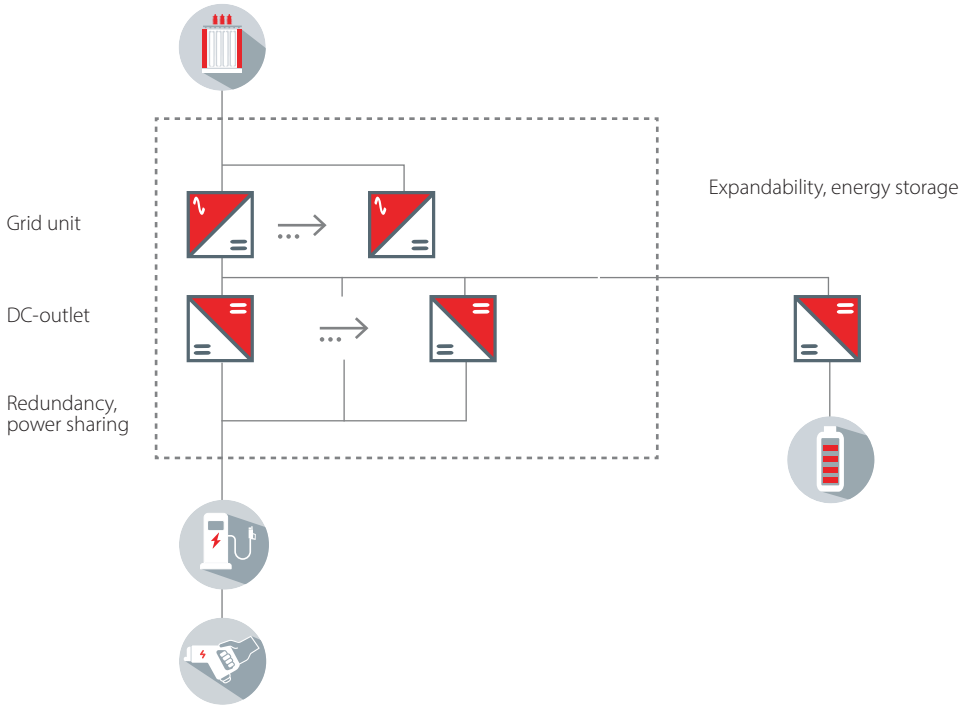
Megawatt chargers demand high power from the grid, typically requiring a grid transformer. For efficiency and cost optimization, our MCS iC7-Hybrid technology supports the grid transformer to act as galvanic isolation, offering:

- Output voltage range 200-1100 VDC or 1500 VDC
- Power step 400 kW up to 3.6 MW
- Continuous current profile

MCS charger system overview
AC-coupled

Wide DC output
Opportunity charging

- 200-1100 VDC or 1500 VDC
- Transformer galvanic isolation
- MW+
- Bidirectional / low harmonics
- Storage for peak shaving
- High efficiency



ENGINEERING
TOMORROW

Depot charging

Key specifications

iC7-Hybrid Isolated DC/DC Converter 88 kW	
DC bus voltage range	550-800 VDC
Vehicle interface current range	-250 A – 250 A
Vehicle interface voltage range	200-1300 VDC
Rated temperature	-15 to 40 °C/5 to 104 °F
Maximum temperature (derating above 40 °C/104 °F)	55 °C/131 °F
Efficiency	Up to 98.8%
Cooling	Air-cooled (back-channel)
Galvanic isolation	Yes
Fieldbus communication	Modbus TCP
Bi-directional energy flow	Yes, 100% power in both directions
Relative humidity	5-96% RH, no condensation
Environmental	IP00 (installation in a cabinet)
Modularity	Up to 8 x 88 kW (700 kW) per charging point

Megawatt charging

iC7-Hybrid DC/DC Converter (DC) ratings at 1025 V DC

IP00/UL Open Type DC/DC converter module

Model code	DC-bus voltage	Vehicle DC-voltage	DC-current	Frame
iC7-60SLDC07	640-1100 V	3-97% of DC-bus	307-3675A	DR10L-3xDR12L

Key specifications

iC7-Hybrid Air-cooled Grid Converter					
Frame	AM10	AM11	2 x AM10	2 x AM11	3 x AM11
Nominal DC power [kW] @480 V AC	378	596	758	1190	1785
Nominal DC power [kW] @400 V AC	338	537	676	1074	1611
Voltage rating	3 x 380-500 V AC, 600-800 V DC				
Overload	110%/150%, 1 min per 5 min cycle				
Rated temperature	-15 to 40 °C/5 to 104 °F				
Maximum temperature (with derating)	55 °C/131 °F				
Environmental	IP00 (installation in cabinet)				

iC7-Hybrid Liquid-cooled Grid Converters ratings at 690 V AC

IP00/UL Open Type Grid Converter module

Model code	AC voltage range	AC current range	DC current range	DC voltage range	Frame
iC7-60SLGC07	525-690 V	241-5870 A	277-6710 A	640-1100 V	AR10L-8xAR12L
iC7-60SLGCG7	380-690 V -15..+10%	1000-7600 A	1180-9000 A	500-1500 V	AR12L-8xAR12L

AM522646231229en-000201 | © Copyright Danfoss Drives | 2025.05

Any information, including, but not limited to information on selection of product, its application or use, product design, weight, dimensions, capacity or any other technical data in product manuals, catalogues descriptions, advertisements, etc. and whether made available in writing, orally, electronically, online or via download, shall be considered informative, and is only binding if and to the extent, explicit reference is made in a quotation or order confirmation. Danfoss cannot accept any responsibility for possible errors in catalogues, brochures, videos and other material. Danfoss reserves the right to alter its products without notice. This also applies to products ordered but not delivered provided that such alterations can be made without changes to form, fit or function of the product. All trademarks in this material are property of Danfoss A/S or Danfoss group companies. Danfoss and the Danfoss logo are trademarks of Danfoss A/S. All rights reserved.