

Fact sheet | iC7-Hybrid 1500 VDC Liquid-cooled Grid Converter

# Intelligent **power conversion** to drive the **energy transition**

The iC7-Hybrid 1500 VDC Liquidcooled Grid Converter is the ideal solution when superior power density and efficiency are preferred. It is built in a robust aluminum frame protecting sensitive electronics against environmental conditions and vibration. True liquid-cooled design ensures minimal losses to air.

An IP00 system module offering enables you to add local value in the system integration instead of turn-key solution. iC7-Hybrid takes power conversion performance to the next level in:

- Energy storage
- Hydrogen electrolyzer power supply
- Shore power supply
- Ultra-fast charging



ENGINEERING TOMORROW

## HIGHLIGHTS

- Unrivalled power density for 1500 VDC applications
- Efficient silicon carbide (SiC) technology
- Robust in harsh conditions
- Ultra-low losses to air
- Modular, scalable and serviceable
- Highest quality and reliability based on IATF 16949 automotive quality standards
- Supported by DrivePro<sup>®</sup> services for global service capability
- Cybersecure according to IEC 62443-4-2 Level 1

Feature	Benefit
Extensive simulation model offering for grid integration studies	Smooth grid connection process
Developed using FMI-compatible model-based design	Easy to integrate into your simulation platform. Each simulation model is a true digital twin and always up-to-date
Grid-forming with 20 years of experience	Flexibility for on-grid and off-grid applications with same converter
Superior control performance and fast control loops	Meets the requirements of the modern low-inertia networks
Cybersecure by design	Cybersecure according to IEC 62443-4-2 Level 1

#### **Global presence:**

Secure your supply chain with our local, carbon-neutral production



## iC7-Hybrid 1500 VDC Liquid-cooled Grid Converter – the **ultimate** in **power density**







Ratings	
Voltage range	3 x 380-690 V AC (-15+10%) 500-1500 V DC
Current range	1000-7600 A AR12L-8xAR12L
DC current range	1180-9000 A
Power range	1.2-9 MVA
Euro efficiency	99.2%
Temperature of cooling agent	-10 to +45 °C at ( $I_{\rm N}$ )(nominal), up to 60 °C with derating
Ambient operating temperature	-15 °C (no frost) to +50 °C (at $I_{\rm N}),$ up to +60 °C with derating
Environmental conditions	
Protection rating drive modules	IP00/UL Open Type; (IP55 protected power electronics)
Dimensions (W x H x D)	235 x 1295 x 566 mm (excluding DC-fuses)
Weight	230 kg
Noise level	69 dBa 1 m in reference cabinet
Maximum altitude	2000 m
THDi	<3%
Grid connection type	IT grid, 3-phase. TN-S, TN-C 1
EMC	
EMC Immunity	IEC/EN 61000-6-2
EMC emissions	CISPR 11 (EN 55011) Class A
Safety	IEC-62477-1
Grid codes	EN 50549-1:2019, EN 50549-2:2019 and EN 50549-10:2022 VDE-AR-N 4110, VDE-AR-N 4120, and VDE-AR-N 4130 ENTSO-e (Regulation 2016/631)
1) Upcoming Danfoss Drives · AM522634528179en-0	

'llustrations not to scale

## Intelligent grid control for modern low-inertia grids



#### Supporting features

- Seamless transition between Grid-following and Grid-forming
- Voltage harmonics compensation (Grid-forming THDv)
- Short circuit current injection
- Synchronization to external grid (2 x 3-phase external voltage measurement)
- Limit controllers
- Operation at reduced power, if one of the power units is out of operation
- I/O, fieldbus, PC tool, and keypad control interface
- Fieldbus customizer (Modbus TCP, PROFINET RT, EtherNet/IP)

## iC7-Hybrid supports these functional extensions:

- I/O and relay option
- Temperature measurement option
- 2 x 3-phase voltage measurement option

#### MyDrive<sup>®</sup> Virtual simulation models reduce time to market

Remove constraints of the physical environment.

FMU models of Grid Converter, DC/DC Converter and Generator application are available for system simulation.

#### 🛃 MyDrive® Virtual



### Simulation models for grid connection studies

Danfoss provides a wide range of simulation models to ensure a smooth grid connection process.

- PSS/E RMS model
- PSCAD EMT models
- DIgSILENT PowerFactory EMT
  and RMS models

Discover more simulation offerings





Imagine versatile and highly secure power conversion and motor control. Intensely powerful and compact converters and drives built to optimize a vast range of systems while giving you the flexibility to distribute intelligence the way you want. Paving the way for a new dimension, where open, connected and intelligent systems are the new reality.



### Open up a new dimension with iC7 series

iC7-Automation | iC7-Marine | iC7-Hybrid

Contact us 🗹

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