



ENGINEERING  
TOMORROW

## HIGHLIGHTS

- Ultra compact
- Modular and configurable drive
- STO SIL3 as standard
- Scalable control platform
- Powerful hardware-based security including end-to-end encrypted data transfer
- Connectivity with multiple fieldbuses
- Industrial IoT-ready
- High-torque machine performance
- Superior motor control

**Safe**  
and fast service  
access

### Fact sheet | iC7-Automation Enclosed Drives

# Need **more intelligence**, with **streamlined integration**?

iC7-Automation Enclosed Drives deliver high torque performance in an ultra compact format. iC7-Automation Enclosed Drives open up new application opportunities with flexible system integration in a wide range of industries. Optimized for compact footprint, ease of use and fast serviceability, you can apply these drives to enhance motor control.

### Versatile

iC7 Enclosed Drives are available in standard cabinet sizes, configured in the right variant to suit your application:

- 6-pulse, low-harmonic, and regenerative variants
- Wide range of options

| Feature   | Benefit  |
|---|--|
| Robust by design, high uptime and quality   | – Reliable in heavy-duty service                 |
| Segregated main cooling channel, (IP21 or IP54) and dedicated PCB area  | – Extremely reliable in heavy-duty service       |
| Wide range of pre-designed options  | – Flexible to meet any application need          |
| Heat management using heat pipe technology and segregated main cooling channel  | – High power density, reduced footprint          |
| Integrated options such as functional extensions, output filters, fuses and disconnects mean no extra external devices are required | – Save cost and time in installation             |
| Installer-friendly design includes pluggable control terminals, easy-access power terminals, and easily replaceable fans            | – Save cost and time in installation and service |
| Modular and scalable solutions for high powers<br>Simplified spare unit handling  | – Fast integration and serviceability            |
| Pull-out of power unit without removing motor or mains cables, included with integration unit                                       | – Fast and easy serviceability                   |
| Safe door-in-door access to the control compartment   | – Safe and fast serviceability                   |

 [Learn more about iC7-Automation drives](#)

[iC7.danfoss.com](https://iC7.danfoss.com) 

## Key specifications <sup>1)</sup>

| Input                             |   |
|-----------------------------------|---|
| Voltage rating                    | 380-500 V AC, +10%/-15%   |
| Supply frequency                  | 50/60 Hz  |
| Switching on input <sup>2)</sup>  | 6-pulse: 1-2 times per minute<br>Low-harmonic and regenerative:<br>Switch on twice at 60 s interval,<br>followed by 10 minutes<br>cooling-down period |
| Grid type                         | TN, TT, IT, Delta   |
| Output                            |   |
| Output frequency                  | 0-599 Hz  |
| Switching on output               | Unlimited   |
| Overload capacity                 | 110/150% – 1 min every 5 min  |
| Environmental conditions          |   |
| Rated temperature                 | -15 to 40 °C (5 to 104 °F)  |
| Maximum temperature with derating | 55 °C (131 °F)  |
| Rated altitude                    | 1000 m (3300 feet) or up to 4,000 m (13,124 ft) with derating   |
| Relative humidity                 | 5-95% non condensing  |
| Functional Safety I/O             |   |
| STO                               | Dual-channel,<br>with galvanic isolation  |
| STO feedback                      | Single channel,<br>with galvanic isolation  |

| External supply  |  |
|------------------|--|
| Rating           | 24 V/2 A   |
| Basic I/O        |  |
| Digital inputs   | 6, single-ended  |
| Relay outputs    | 3<br>• 2 x NO, NC<br>• 1 x NO<br>• 250 V AC 3 A max. (50/60 Hz)<br>• 24 V DC 2 |
| Analog inputs    | 2<br>• -20/0 to +20 mA or<br>• -10/0 to +10 V                                  |
| Analog output    | 1<br>• 0-20 mA or<br>• 0-10 V resistive load                                   |
| Thermistor input | 1, isolated  |
| Compliance       |  |
| Compliance       | IEC 61800-5-1<br>UL 61800-5-1  |

<sup>1)</sup> Preliminary values pending validation.

<sup>2)</sup> Refer to Design Guide for more information.

<sup>3)</sup> 2 of the inputs can be reconfigured to outputs

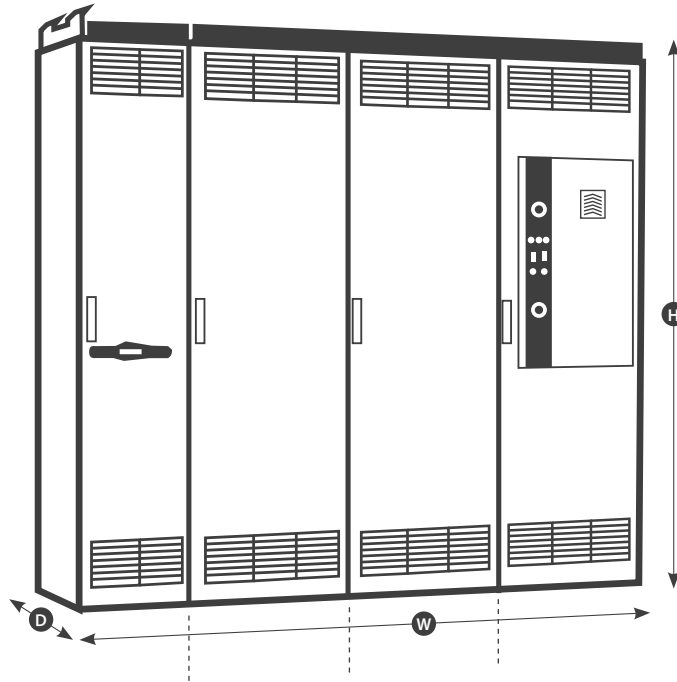
## Key specifications for 6-pulse, low-harmonic or regenerative enclosed drives

| Environmental     | 6-pulse   | Low-harmonic & regenerative |
|-------------------|---|-----------------------------|
| Voltage rating    | 3 x 380-500 V AC, -20%/+10%                         |                             |
| Current range     | 206-588 A   | 385-1710 A                  |
| Overload capacity | 110/150% for 1 minute every 5 minutes <sup>1)</sup> |                             |
| Protection rating | IP21/UL Type 1, IP54                                |                             |

<sup>1)</sup> 1 minute every 10 minutes, for frames FE9 and FE10  
1 minute every 5 minutes, for all other frames

## Control options

| Functional extensions         | Description   |
|-------------------------------|---|
| General Purpose I/O OC7C0     | General purpose I/O extension board (3xDI, 2xDO, 2xAI, 1xAO)                                  |
| Relay Option OC7R0            | Relay I/O extension board, with 3 relays  |
| Encoder/Resolver Option OC7M0 | Encoder/Resolver extension board<br>(TTL, HTL, SinCos, SSI, HIPERFACE, EnDat, BiSS, resolver) |
| Temperature Measurement OC7T0 | Temperature measurement extension board with 5 channels                                       |
| I/O and Relay Option OC7C1    | I/O extension   |



## Dimensions

| Frame |        | 6-pulse enclosed drives |                    | Low-harmonic & regenerative enclosed drives |                      |                      |                      |
|-------|--------|-------------------------|--------------------|---|----------------------|----------------------|----------------------|
|       |        | FE09                    | FE10               | AE10 + IE10                                 | AE11 + IE11          | 2 x AE10 + 2 x IE10  | 2 x AE11 + 2 x IE11  |
| [mm]  | Width  | 400                     | 600                | 800   | 1200                 | 2200                 | 2400                 |
|       | Height | 2300 <sup>1)</sup>      | 2300 <sup>1)</sup> | 2300 <sup>1)2)</sup>                        | 2300 <sup>1)2)</sup> | 2300 <sup>1)2)</sup> | 2300 <sup>1)2)</sup> |
|       | Depth  | 600                     | 600                | 600   | 600                  | 600                  | 600                  |
| [in]  | Width  | 15.7                    | 23.6               | 31.5  | 47.2                 | 86.6                 | 94.5                 |
|       | Height | 90.6 <sup>1)</sup>      | 90.6 <sup>1)</sup> | 90.6 <sup>1)2)</sup>                        | 90.6 <sup>1)2)</sup> | 90.6 <sup>1)2)</sup> | 90.6 <sup>1)2)</sup> |
|       | Depth  | 23.6                    | 23.6               | 23.6  | 23.6                 | 23.6                 | 23.6                 |

<sup>1)</sup> With 200 mm/7.8 in plinth and lifting rails, without lifting rails -101 mm/4.0 in  
<sup>2)</sup> If IP21 cabinet total height is 2400 mm/94.5 in

The Danfoss logo is written in a white, cursive script font on a red rectangular background.

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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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