Need more intelligent VFDs, with streamlined integration?

Highlights

- > Ultra compact
- > Modular and configurable drive
- > STO and SS1-t SIL3 as standard
- > Functional safety by fieldbus: PROFIsafe
- > Scalable control platform
- > Powerful hardware-based security including end-to-end encrypted data transfer
- > Connectivity with multiple fieldbuses. Activate new fieldbus by license key
- > Industrial IoT-ready with secure OPC UA
- > High-torque machine performance
- > Superior motor control

iC7-Automation Enclosed Drives deliver high torque performance in an ultra compact format. They 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-Automation 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

Learn more about iC7-Automation

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, disconnectors and breakers 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 Simplified spare unit handling	– Fast integration and serviceability
Pull-out of power unit without removing motor or mains cables with the unit easily slid out onto an integrated service table	– Fast and easy serviceability
Safe door-in-door access to the control compartment while drive powered on	– Safe and fast serviceability

Key specifications

Input	
Voltage rating	Voltage class 05: 3 x 380-500 V AC, -15%/+10% Voltage class 07: 3 x 525-690 V AC, -15%/+10%
Current range	6-pulse: 206-588 A @ 500 V AC Low-harmonic & regenerative: 385-2510 A @ 500 V AC 261-1770 A @ 690 V AC
Supply frequency	50/60 Hz
Switching on input [1]	6-pulse: 1-2 times per minute Low-harmonic and regenerative: Switch on twice at 60 s interval, followed by 10 minutes cooling-down period
Grid type	TN, TT, IT, Delta
Output	
Output frequency	0-599 Hz
Switching on output	Unlimited
Overload capacity	110/150% for 1 minute every 5 minutes [2]
Environmental conditions	
Protection rating	IP21, IP54
Rated temperature	-15 to 40 °C (5 to 104 °F)
Maximum temperature with derating	50 °C (122 °F)
Rated altitude	1000 m (3300 ft) or up to 3000 m (9843 ft) with derating. 2000 m (6562 ft) for 690 V variants
Relative humidity	5-95% non condensing

Harmonic mitigation and THDi	
iC7-Automation, low harmonic and regenerative enclosed drives	Total harmonic distortion (nominal situation and undistorted network): THDi <5%
Functional Safety I/O	
STO	Dual-channel, with galvanic isolation
STO feedback	Single channel, with galvanic isolation
External supply	
Rating	24 V/2 A
Basic I/O	
Digital inputs [3]	6, single-ended
Relay outputs	3 • 2 x NO, NC • 1 x NO • 250 V AC 3 A max. (50/60 Hz) • 24 V DC 2
Analog inputs	2 • -20/0 to +20 mA or -10/0 to +10 V
Analog output	1 • 0-20 mA or 0-10 V resistive load
Thermistor input	1, isolated
Compliance	
Compliance	IEC 61800-5-1

[1] Refer to Design Guide for more information.
[2] 1 minute every 10 minutes, for frames FE9 and FE10
1 minute every 5 minutes, for all other frames
[3] 2 of the inputs can be reconfigured to outputs

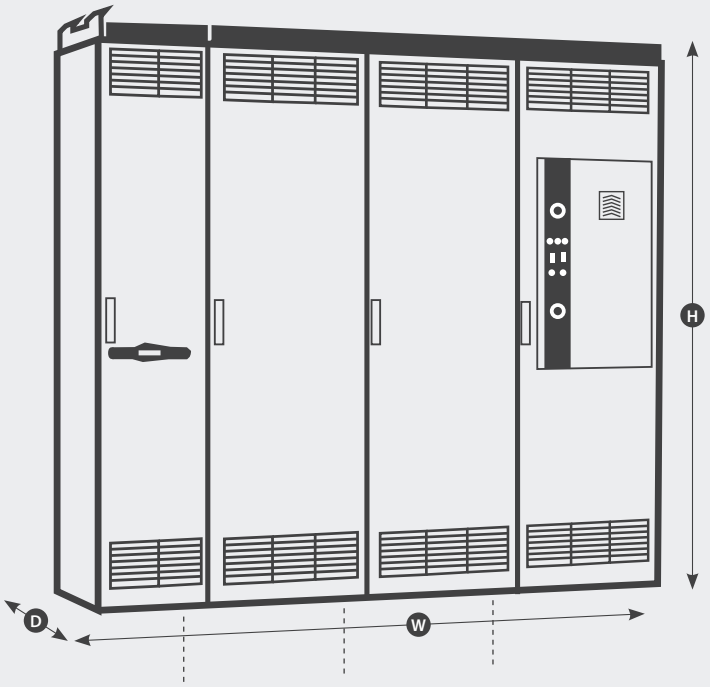
Key specifications for 6-pulse, low-harmonic or regenerative enclosed drives

Environmental	6-pulse	Low-harmonic & regenerative
Voltage rating	Voltage class 05: 3 x 380-500 V AC, -15%/+10%	Voltage class 07: 3 x 525-690 V AC, -15%/+10%
Current range	206-588 A	261-2510 A
Overload capacity	110/150% for 1 minute every 5 minutes [1]	110/150% for 1 minute every 5 minutes [1]
Protection rating	IP21, IP54	IP21, IP54

[1] 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 (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

		6-pulse enclosed drives		Low-harmonic & regenerative enclosed drives				
Frame		**FE09**	**FE10**	**AE10 + IE10**	**AE11 + IE11**	**2 x AE10 + 2 x IE10**	**2 x AE11 + 2 x IE11**	**3 x AE11 + 3 x IE11**
[mm]	Width	400	600	800	1200	2200	2400	3200
	Height	2300 [1]	2300 [1]	2300 [1] [2]	2300 [1] [2]	2300 [1] [2]	2300 [1] [2]	2300 [1] [2]
	Depth	600	600	600	600	600	600	600
[in]	Width	15.7	23.6	31.5	47.2	86.6	94.5	126
	Height	90.6 [1]	90.6 [1]	90.6 [1] [2]	90.6 [1] [2]	90.6 [1] [2]	90.6 [1] [2]	90.6 [1] [2]
	Depth	23.6	23.6	23.6	23.6	23.6	23.6	23.6

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

Cabinet options

Mains input device	+GAXX	None
	+GACO	Mains contactor and switch
	+GAMS	Mains switch
	+GACB	Air circuit breaker fixed
Grounding device provision	+GCXX	None
	+GCEP	Provision for grounding device
	+GCES	Grounding switch
Motor heater control	+IAXX	None
	+IAMH	Yes
Cabinet heater	+IBXX	None
	+IBCH	Yes
Motor fan control	+ICXX	None
	+ICFC	Motor fan control
	+ICF1	Motor fan ctrl/supply 2.5-4 A
	+ICF2	Motor fan ctrl/supply 4-6.3 A
	+ICF3	Motor fan ctrl/supply 6.3-10 A
	+ICF4	Motor fan ctrl/supply 10-16 A
Motor brake control	+IDXX	None
	+IDBC	Motor brake control
Control power supply	+IFXX	None
	+IFCS	24 VDC
Service socket	+IGXX	None
	+IGS0	230 VAC socket CEE 7/3
	+IGS1	115 VAC socket, US
	+IGS2	230 VAC socket, UK
Auxillary voltage supply	+IHAT	AC voltage transformer
	+IHAS	AC supply terminals
Door signal lights	+IIXX	None
	+IICD	Run, ready, fault
Emergency stop button	+ILXX	None
	+ILSS	STO/SS1 push button on door
Mains cabling direction	+KCIB	Bottom-entry
	+KCIT	Top-entry
	+KDOB	Bottom-entry
	+KDOT	Top-entry
Cable entry plate	+KFXX	With standard glands
	+KFCP	Blank plate without holes (UL)
Output filter	+MAXX	None
	+MAC2	Common-mode Filter
	+MAU1	dU/dt Filter
	+MAU2	dU/dt + CM Filter
Air-cooling options	+OAXX	Standard
	+OAOF	Cooling air outlet flange
	+OABC	Back-channel cooling
Maintenance options	+QAXX	None
	+QALS	Lifting support for power unit

Some functionalities listed in this fact sheet are for future implementation