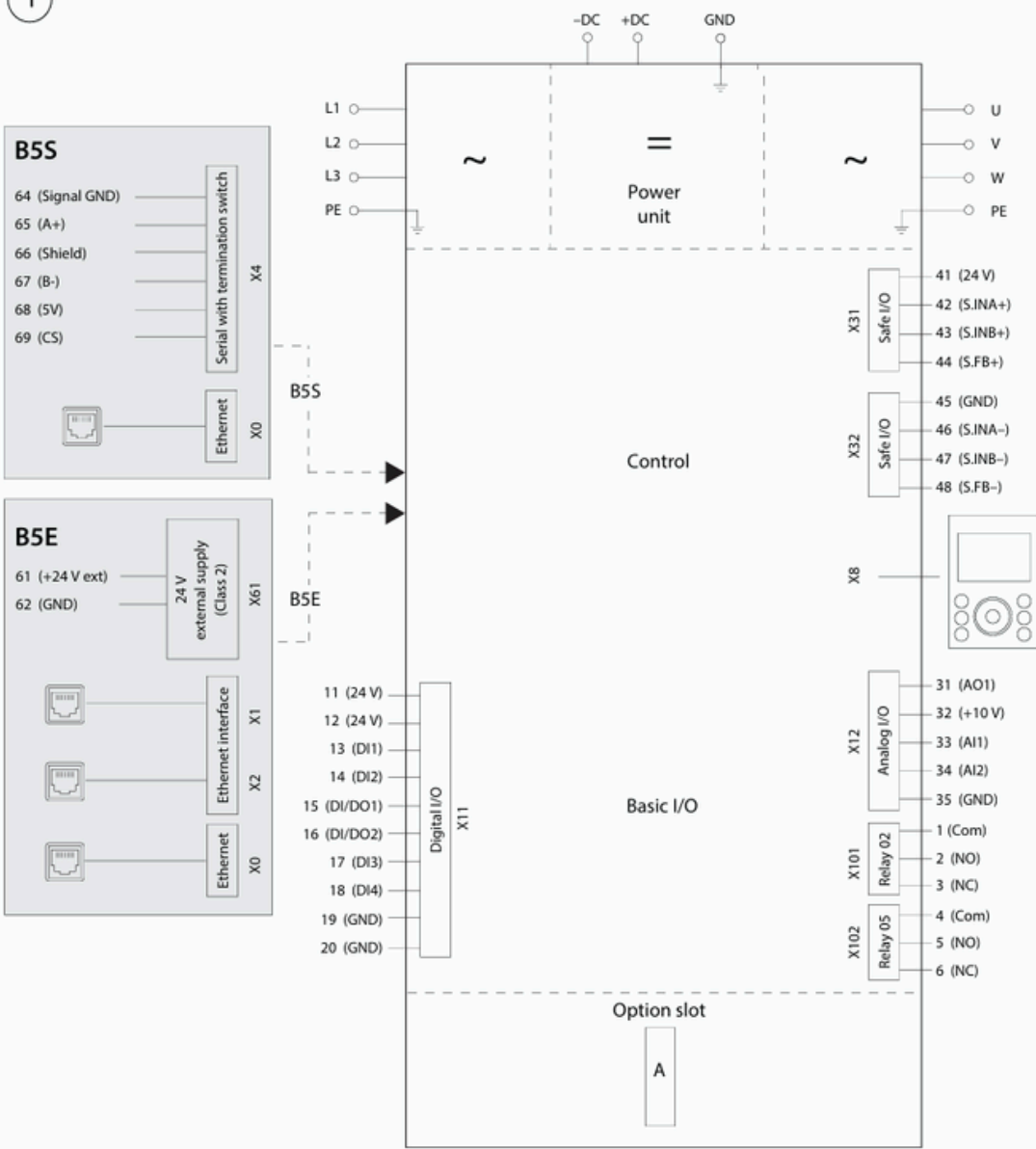


Aufbau Steuerkarte

iC7 Aqua/HVAC-R

1



Spezifikationen 1/2

iC7 HVAC-R

Input	
Supply voltage	380-480 V AC, -15%/+10%
Supply frequency	45-65 Hz
Output	
Power range	1.1-710 kW (1.5-950 hp)
Output current	3.0-1260 A
Overload ratings	110% (fans, pumps and compressors), 150% (compressors with high starting torque)
Output frequency	0-590 Hz
Environmental conditions	
Protection ratings and cooling versions	
– Frames Fx02-Fx08 1.1-90 kW (400 V supply)	IP20 (UL Open Type), IP21 (UL Type 1), IP55 (UL Type 12)
– Frames Fx09-Fx12 110-710 kW (400 V supply)	IP20 (UL Open Type), IP21 (UL Type 1), IP54 (UL Type 12), back-channel cooling
Ambient operating temperature ¹⁾	-30 to 60 °C (-22 to 140 °F) <i>Refer to design guide for derating</i>
Maximum altitude	4400 m (14400 feet)
Relative humidity	3K22, maximum 95% non-condensing
Chemically active substances (IEC 60721-3-3:2019)	– C3 (P1) – Medium corrosivity – Non coated – C4 (P2) – High corrosivity – Coated
Shock & vibration (IEC 60721-3-3:2019)	3M12
Harmonic mitigation and THDi	
iC7-HVACR	THDi <40% at full load as per IEC61000-3-12
iC7-HVACR ULH	THDi <3% at full load and <5% at part load

EMC protection (EN/IEC 61800-3 compliance class) ²⁾	Cable length ³⁾
C1	Up to 50 m
C2	Up to 150 m
C3	Up to 300 m
Compliance	
Efficiency class	IE2 as per IEC 61800-9-2. See EcoDesign Directive for a full list of losses at your desired operating point. <i>MyDrive® Energy tool also provides part-load efficiency data.</i>
Approvals	UL 61800-5-1 ed 3. CE IEC61800-5-1. For other approvals, contact Danfoss
Functional safety I/O	
STO	SIL3, PL e
Control I/O – standard	
Analog inputs (AI)	2
– Voltage mode	0-10 V, scalable
– Current mode	0/4-20 mA
– Temperature sensor support	Pt1000, Ni1000, KTY81, KTY82, KTY84
Analog outputs (AO)	1 (0/4-20 mA)
Digital inputs (DI)	4+2 (0/24V, selectable PNP or NPN)
Digital outputs (DO)	2 (0/24 V) Digital outputs are reconfigured from digital inputs
Relay outputs (RO)	2 (NO/NC), 250 V AC/2 A, 24 V DC/2A
Auxiliary voltages	10 V output (10 mA), 24 V output (150 mA)
External supply	24 V external supply input (2 A)

¹⁾ Rated operating temperature varies between products
²⁾ Compliance classes:
C1: Intended for residential, commercial and light industrial installations, and critical installations such as airports, hospitals and data centers
C2: For commercial installations, only when installed by professionals
C3: For industrial installations
³⁾ Cable length varies with product size

Spezifikationen 2/2

iC7 HVAC-R

Power options	
Mains input variants	Mains switch, AC fuses
Output filters (external)	dU/dt filters, sine-wave filters
Functional extension options	
General Purpose I/O OC7C0	General purpose I/O extension board (3xDI, 2xDO, 2xAI, 1xAO, temperature measurement)
Relay Option OC7R0	Relay I/O extension board, with 3 relays (2 NO/NC, 1 NO up to 250 V AC/2 A)
Temperature Measurement OC7T0	Temperature measurement extension board with 5 sensor inputs, Pt100, Pt1000, Ni1000, and KTY81
Temperature & Analog I/O OC7T2	Temperature measurement and analog I/O extension board (3 x AI, 3 x AO, 3 temperature sensor inputs)
Fieldbus options (embedded)	
Ethernet control board	Modbus TCP, BACnet IP, EtherNet/IP, PROFINET RT/S2, EtherCAT
Serial control board	Modbus RTU, BACnet MSTP
Other protocols	MQTT
Ease-of-use	
Control panel	
– Display	2.8" graphical, 9 line, greyscale, high resolution
– Buttons	"Back", "on-board manual", rem/loc (HOA) etc. Tactile feedback buttons for operation, local/remote control (HOA) and easy navigation

Commissioning	Guided setup and setup assistant
Parameter backup and restore	
Event log	Clear fault and warning messages
Commissioning tools	MyDrive® Insight*
Engineering tools	MyDrive® Harmonics, MyDrive® Select, MyDrive® Energy
Easy power cable connection	Terminal sliders for 30-90 kW units. Pluggable terminals for IP20 units up to 22 kW.
Dedicated HVAC features	
Fire mode protection	Basic and advanced fire mode protection
Cooling tower optimization	Algorithm built-in
Enthalpy	Wet bulb temp and dew point conversion
PID loops	4
Condition-based monitoring	Stator windings, load envelope, vibration monitoring
Power and energy monitoring	kWh counter, RunHours, kW

Leistungsübersicht

iC7 HVAC-R

Model code	Rated output current ^{1) 2) 3)}								Frame		
	400 V				460 V				IP20	IP21	IP54/55
	I _{Lo}	Power	I _{Ho}	Power	I _{Lo}	Power	I _{Ho}	Power			
	[A]	[kW]	[A]	[kW]	[A]	[HP]	[A]	[HP]			
03A0	3.0	1.1	2.4	0.75	2.7	1.5	2.1	1	FA02	FK03	FB03
04A0	4.0	1.5	3.0	1.1	3.4	2	2.7	1.5			
05A6	5.6	2.2	4.0	1.5	4.8	3	3.4	2			
07A2	7.2	3.0	5.6	2.2	6.3	4	4.8	3			
09A2	9.2	4.0	7.2	3.0	8.2	5	6.3	4			
12A5	12.5	5.5	9.2	4.0	11.0	7.5	8.2	5			
16A0	16	7.5	12.5	5.5	14.5	10	11.0	7.5	FA04	FK05	FB05
24A0	24	11	16	7.5	21	15	14.5	10			
31A0	31	15	24	11	27	20	21	15			
38A0	38	18.5	31	15	34	25	27	20	FA05	FK06	FB06
43A0	43	22	38	18.5	40	30	34	25	FA06		
61A0	61	30	46	22	55	40	40	30	FA07		
73A0	73	37	61	30	66	50	55	40	FA08	FK07	FB07
90A0	90	45	73	37	81	60	66	50	FA09		
106A	106	55	90	45	96	75	81	60	FA10		
147A	147	75	106	55	133	100	96	75	FA09	FK09	FB09
170A	170	90	147	75	156	125	133	100			
206A	206	110	170	90	196	150	166	125			
245A	245	132	206	110	240	200	196	150	FA10	FK10	FB10
302A	302	160	245	132	302	250	240	200			
385A	385	200	302	160	364	300	302	250			
395A	395	200	302	200	364	300	302	300	FA11	FK11	FB11
480A	480	250	385	200	456	350	364	300			
588A	588	315	480	250	520	450	456	350			
658A	658	355	588	315	590	500	520	450	FA12	FK12	FB12
736A	736	400	658	355	658	550	590	500			
799A	799	450	695	400	730	600	653	550			
893A	893	500	799	450	784	650	700	600	FA12	FK12	FB12
1000	1000	560	880	500	896	750	784	650			
1120	1120	630	1000	560	1028	850	896	750			
1260	1260	710	1100	630	1150	950	1028	850			

¹⁾ I_{Lo}: Low overload current. Rated continuous output current with 110% overload capacity – 1 min every 10 min
²⁾ I_{Ho}: High overload current. Rated continuous output current with 150% overload capacity – 1 min every 10 min
³⁾ Power values are based on a typical 4-pole induction motor