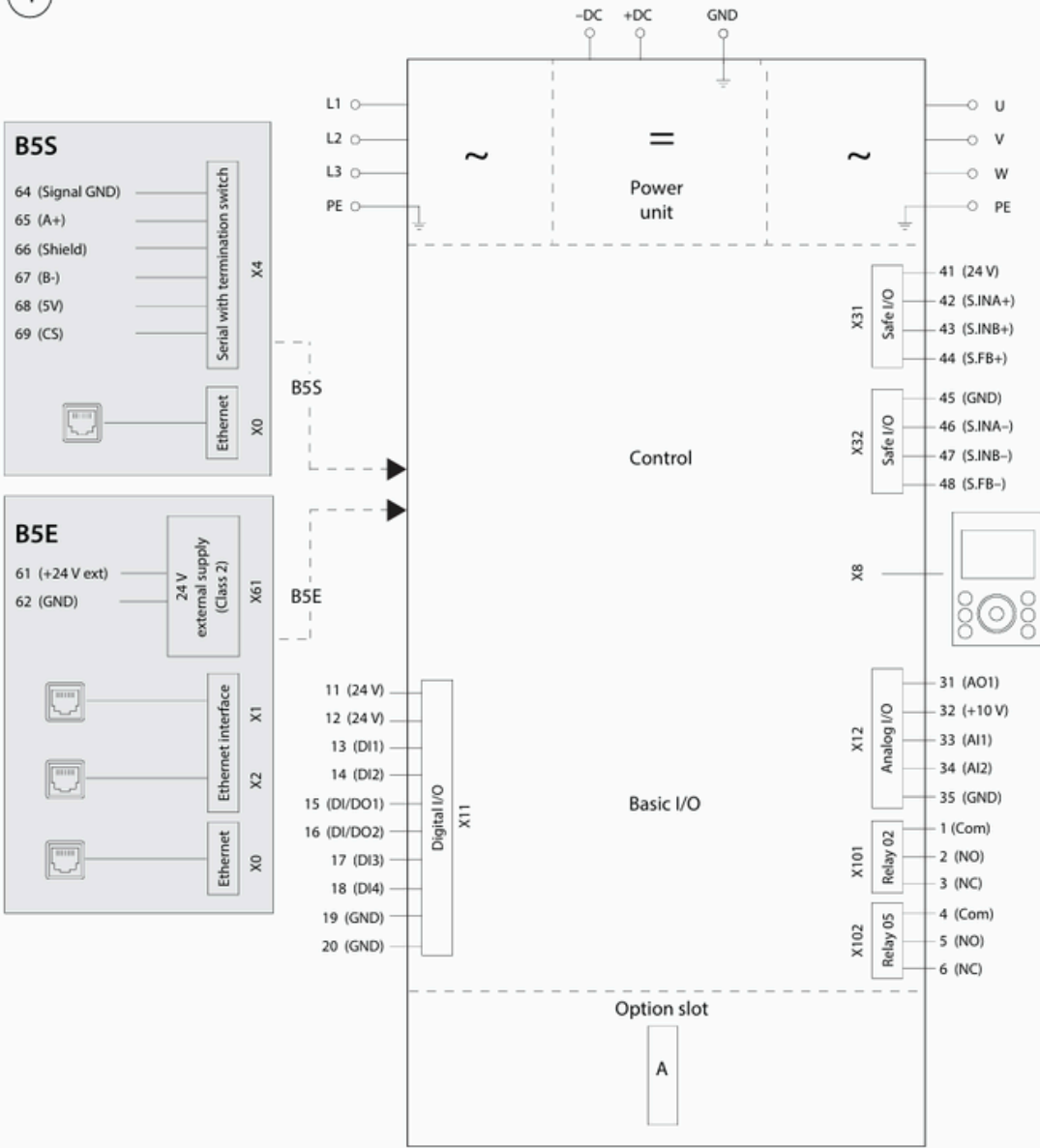


Aufbau Steuerkarte

iC7 Aqua/HVAC-R

1



Spezifikationen 1/2

iC7 Aqua

Input	
Supply voltage	380-480 V AC, -15%/+10%
Supply frequency	45-65 Hz
Output	
Power range	0.37-710 kW (0.5-950 hp)
Output current	3.0-1260 A
Overload ratings	110%: fans, centrifugal pumps, blowers and aerators 150%: piston pumps, high-pressure pumps, mixers, agitators, decaners/centrifuges
Output frequency	0-590 Hz
Environmental conditions	
Protection ratings and cooling versions	
– Frames Fx02-Fx08 0.37-90 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-Aqua	THDi <40% at full load as per IEC61000-3-12
iC7-Aqua 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</i> tool also provides part-load efficiency data.
Approvals	UL: UL61800-5-1 ed. 2.0; CE: IEC 61800-5-1 ed 3.0 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)	Voltage mode: 0-10 V Current mode: 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) ⁴⁾ , Class 2 supply

¹⁾ Rated operating temperature varies between products
²⁾ Compliance classes:
C1: Intended for residential, commercial and light industrial installations
C2: For commercial installations, only when installed by professionals
C3: For industrial installations
³⁾ Cable length varies with product size
⁴⁾ Not available for

Spezifikationen 2/2

iC7 Aqua

Power options	
Mains input variants	Mains switch, AC fuses
Output filters (external)	dU/dt filters, sine-wave filters, common-mode 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
Fieldbus options (embedded)	
Ethernet	Modbus TCP, EtherNet/IP, PROFINET RT/S2, EtherCAT
Serial	Modbus RTU
Other protocols	OPCUA ¹⁾
Ease-of-use	
Control panel	
– Display	2.8", up to 8 lines, with graphic curves and visuals
– 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	
Commissioning tools	MyDrive® Insight
Engineering tools	MyDrive® Harmonics, MyDrive® Select, MyDrive® Energy
Easy cable installation	Terminal sliders for 30-90 kW (45 -125 hp) units. Pluggable terminals for IP20 units up to 22 kW (30 hp).

Dedicated pump features	
Dry run detection	Protects the pump
Flow compensation function	Saves energy
2 step ramps (initial/final ramp) and minimum speed monitor	Protects deep well pumps
Check valve ramp	Protects against water hammering and saves installation cost for soft close valves
Pipe fill mode	Eliminates water hammering
Built-in motor alternation feature	Duty stand by operation, cost reduction
Sleep Mode and no/low flow detection	Save energy and protect the pump
End of pump-curve detection	Pump protection, leakage detection
Pump cascade controller	Saves energy and reduces equipment cost
MyDrive® Logic controller	Often makes PLC omissible
Advanced multi-pump control ¹⁾	Fully redundant cascade system for maximum uptime
Deragging	Preventive/reactive pump cleaning
Pre/Post Lubrication	System and pump protection
Free programmable infos/warnings/alerts	Perfect system integration and adaptation to the application
Flow confirmation	System and pump protection

¹⁾ Pending

Leistungsübersicht

iC7 Aqua

Model code	Rated output current ^{1) 2) 3)}								Frame		
	400 V				460 V						
	I _{LO}	Power	I _{HO}	Power	I _{LO}	Power	I _{HO}	Power	IP20	IP21	IP54/55
	[A]	[kW]	[A]	[kW]	[A]	[HP]	[A]	[HP]			
01A3	1.3	0.37	0.9	0.25	1.2	0.5	0.8	0.33	FA02	FK03	FB03
01A8	1.8	0.5	1.3	0.37	1.6	0.75	1.2	0.5			
02A4	2.4	0.75	1.8	0.55	2.2	1	1.6	0.75			
03A0	3.0	1.1	2.4	0.75	2.7	1.5	2.1	1			
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			
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		
43A0	43	22	38	18.5	40	30	34	25	FA06	FK06	FB06
61A0	61	30	46	22	55	40	40	30	FA07	FK07	FB07
73A0	73	37	61	30	66	50	55	40			
90A0	90	45	73	37	81	60	66	50	FA08	FK08	FB08
106A	106	55	90	45	96	75	81	60			
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			
302A	302	160	245	132	302	250	240	200			
385A	385	200	302	160	364	300	302	250	FA10	FK10	FB10
395A	395	200	302	200	364	300	302	300			
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	FA11	FK11	FB11
736A	736	400	658	355	658	550	590	500			
799A	799	450	695	400	730	600	653	550	FA12	FK12	FB12
893A	893	500	799	450	784	650	700	600			
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