

Specifications

(Basic unit without extensions)

Main supply (L1, L2, L3)	
Supply voltage	200 – 240 V ±10%
Supply voltage	380 – 480 V ±10%
Supply voltage	525 – 600 V ±10%
Supply voltage	525 – 690 V ±10%
Supply frequency	50/60 Hz
Displacement power factor (cos φ) near unity	> 0.98
Switching on input supply L1, L2, L3	1–2 times/min.
Harmonic disturbance	Meets EN 61000-3-12

Output data (U, V, W)	
Output voltage	0 – 100% of supply voltage
Output frequency	0–1000 Hz
Switching on output	Unlimited
Ramp times	1 – 3600 sec.

Digital inputs	
Programmable digital inputs	6*
Changeable to digital output	2 (terminal 27, 29)
Logic	PNP or NPN
Voltage level	0 – 24 V DC
Maximum voltage on input	28 V DC
Input resistance, Ri	Approx. 4 kΩ
Scan interval	5 ms

* 2 can be used as digital outputs

Analog inputs	
Analogue inputs	2
Modes	Voltage or current
Voltage level	0 to +10 V (scaleable)
Current level	0/4 to 20 mA (scaleable)
Accuracy of analog inputs	Max. error: 0.5% of full scale

Pulse inputs	
Programmable pulse inputs	2*
Voltage level	0 – 24 V DC (PNP positive logic)
Pulse input accuracy (0.1 – 1 kHz)	Max. error: 0.1% of full scale

* Utilize some of the digital inputs

Digital outputs	
Programmable digital/pulse outputs	2
Voltage level at digital/frequency output	0 – 24 V DC
Max. output current (sink or source)	40 mA
Maximum output frequency at frequency output	0 to 32 kHz
Accuracy on frequency output	Max. error: 0.1% of full scale

Analogue output	
Programmable analogue outputs	1
Current range at analogue output	0/4 – 20 mA
Max. load to common at analogue output (clamp 30)	500 Ω
Accuracy on analogue output	Max. error: 1% of full scale

Control card	
USB interface	1.1 (Full Speed)
USB plug	Type "B"
RS485 interface	Up to 115 kBaud
Max. load (10 V)	15 mA
Max. load (24 V)	200 mA

Relay output	
Programmable relay outputs	2
Max. terminal load (AC) on 1-3 (break), 1-2 (make), 4-6 (break) power card	240 V AC, 2 A
Max. terminal load (AC) on 4-5 (make) power card	400 V AC, 2 A
Min. terminal load on 1-3 (break), 1-2 (make), 4-6 (break), 4-5 (make) power card	24 V DC 10 mA, 24 V AC 20 mA

Surroundings/external	
Enclosure	IP: 00/20/21/54/5566 UL Type: Chassis/1/12/4x Outdoor
Vibration test	1.0 g (D, E & F-enclosures: 0.7 g)
Max. relative humidity	5% – 95% (IEC 721-3-3; Class 3K3 (non-condensing) during operation)
Ambient temperature	Max. 50° C w/o derating
Galvanic isolation of all	I/O supplies according to PELV
Aggressive environment	Designed for coated/uncoated 3C3/3C2 (IEC 60721-3-3)

Fieldbus communication	
Standard built-in: FC Protocol N2 Metasys FLN Apogee Modbus RTU BACnet (embedded)	Optional: LonWorks (MCA 108) BACnet (MCA 109) Profibus (MCA 101) DeviceNet (MCA 104)

Protection mode for longest possible up-time	
– Electronic thermal motor protection against overload	
– Temperature monitoring of the heatsink ensures that the frequency converter trips if the temperature reaches 95° C ± 5° C.	
– The frequency converter is protected against short-circuits on motor terminals U, V, W.	
– The frequency converter is protected against earth faults on motor terminals U, V, W.	
– Protection against mains phase loss	

Power, currents and enclosures

FC 102	kW	T2 200 – 240 V				T4 380 – 480 V						T6 525 – 600 V				T7 525 – 690 V				
		Amp.	IP 20/Chassis	IP 21/Type 1	IP 55 / Type 12	IP 66 /Type 12	Amp.		IP 00/Chassis	IP 20/Chassis	IP 21/Type 1	IP 54/Type 12	IP 55/Type 12	IP 66/Type 12	Amp.		IP 20/Chassis	IP 21/Type 1	IP 55/Type 12	IP 66/Type 12
							≤440 V	>440 V							≤550 V	>550 V				
P1K1	1.1	6.6					3	2.7						2.6	2.4					
P1K5	1.5	7.5	A2	A2	A4/A5	A4/A5	4.1	3.4	A2	A2				2.9	2.7	A3	A3	A5	A5	
P2K2	2.2	10.6					5.6	4.8						4.1	3.9					
P3K0	3	12.5	A3	A3	A5	A5	7.2	6.3						5.2	4.9					
P3K7	3.7	16.7																		
P4K0	4.0						10	8.2	A2	A2				6.4	6.1					
P5K5	5.5	24.2					13	11	A3	A3			A5	A5	9.5	9	A3	A3	A5	A5
P7K5	7.5	30.8	B3	B1	B1	B1	16	14.5						11.5	11					
P11K	11	46.2					24	21	B3	B1			B1	B1	19	18				
P15K	15	59.4	B4	B2	B2	B2	32	27						23	22	B3	B1	B1	B1	
P18K	18	74.8					37.5	34	B4	B2			B2	B2	28	27				
P22K	22	88	C3	C1	C1	C1	44	40						36	34					
P30K	30	115					61	52	B4	B2			B2	B2	43	41	B4	B2	B2	B2
P37K	37	143	C4	C2	C2	C2	73	65						54	52					
P45K	45	170					90	80	C3	C1			C1	C1	65	62	C3	C1	C1	C1
P55K	55						106	105						87	83					
P75K	75						147	130	C4	C2			C2	C2	105	100	C4	C2	C2	C2
P90K	90						177	160						137	131					
P110	110						212	190	D3		D1	D1								
P132	132						260	240												
P160	160						315	302												
P200	200						395	361	D4		D2	D2								
P250	250						480	443												
P315	315						600	540												
P355	355						658	590												
P400	400						745	678	E2		E1	E1								
P450	450						800	730												
P500	500						880	780												
P560	560						990	890			F1/F3	F1/F3								
P630	630						1120	1050												
P710	710						1260	1160												
P800	800						1460	1380			F2/F4									
P900	900																			
P1M0	1000						1720	1530			F2/F4									
P1M2	1200																			
P1M4	1400																			

IP 00/Chassis	IP 20/Chassis	IP 21/Type 1	With upgrade kit	IP 54/Type 12	IP 55/Type 12	IP 66/Type 4x Outdoor
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Dimensions [mm]

	A2	A3	A4	A5	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4	E1	E2	F1	F2	F3	F4
H	268	390	420	480	650	399	520	680	770	550	660	1209	1589	1046	1327	840	831	2324	2324	2324	2324	2324
W	90	130	200	242	165	230	308	370	308	370	308	370	420	380	408	2197	1705	1569	1962	2159	2159	2159
D	205	175	200	260	249	242	310	335			333		380		375	736	736	927	927	927	927	927
H+	375				475	670			755	950												
W+	90	130			165	255			329	391												

Note: H and W dimensions are with back-plate. H+ and W+ are with IP upgrade kit. D dimensions are without option. A or B for A2 and A3.