Frequency converter for the dezentralized SIMATIC ET 200S system

ET 200S FC frequency converter

	Control unit	Converter power modules		
	ICU24	**IPM25, FS A Frame size A**	**IPM25, FS B Frame size B**	
Selection features				
Integral safety functions according to Category 3 of EN 954-1 or according to SIL2 of IEC 61508	-	-	-	
Output	-	0.75 kW	2.2 kW	4.0 kW
Rated input current (at 50° C ambient temperature)	-	1.9 A	5.7 A	9.6 A
Rated output current (at 50° C ambient temperature)	-	2.1 A	5.9 A	10.2 A
Mounting dimensions (W x H x D) in mm (including terminal module)	15 x 220 x 156	65 x 290 x 156	130 x 290 x 156	
Electrical data				
Line voltage	3 AC 380 V to 480 V +10% / -15%			
Line frequency	47 Hz to 63 Hz			
Overload capability	• Overload current 1.5 x rated output current (i.e. 150% overload capability) for 60 s, cycle time 300 s • Overload current 2 x rated output current (i.e. 200% overload capability) for 3 s, cycle time 300 s			
Output frequency	0 Hz to 650 Hz			
Pulse frequency	8 kHz (standard), 2 kHz to 16 kHz (in 2 kHz increments)			
System perturbation	Low loading of power supply network by network harmonics (guide values: 5: 20% 7: 14% 11: 9% 13: 8%)			
Skipped frequency range	1, programmable			
Converter efficiency	≥96 %			

Interfaces	• Connection to PROFIBUS or PROFINET over the ET 200 S backplane bus • RS232 interface with USS protocol for commissioning on the PC using the STARTER commissioning software • Slot for an optional memory card (MMC) for uploading or downloading parameter settings • PTC/KTY84 interface for motor temperature monitoring • Speed sensor interface (Sub-D connector) for unipolar HTL incremental position encoder	
Functions		
Control method	• V/f control – linear ($M \sim n$) with/without flux current control (FCC), quadratic ($M \sim n^2$) or parameterizable • Vector control – with or without encoder • Torque control	
Operating functions	Jogging mode, free function blocks (FFB), positioning deceleration ramp, automatic restart following interruption due to power failure, bumpless connection of converter to rotating motor	
Braking functions	• Regenerative braking operation without brake chopper and pulsed resistor • Control of an electrical holding brake via an optional brake control module	
Protection features for	Undervoltage, overvoltage, ground faults, short circuits, stall prevention, thermal motor protection I^2t, converter overtemperature, motor blocking protection	
Connectable motors	• Low-voltage asynchronous motors • Motor cable lengths: max. 50 m (shielded) max. 100 m (unshielded) If an output reactor or an LC filter is used, longer cable lengths are possible	
Mechanical data		
Degree of protection	IP20	
Operating temperature	• With vertical design of station	-10 °C to + 40 °C
	• With horizontal design of station	-10 °C to + 50 °C/to +60 °C with derating
Standards		
Compliance with standards	UL, cUL,CE, c-tick, according to low-voltage directive 73/23/EEC, EMC directive 89/336/EEC	

Derating data

Pulse frequency

Output	**Rated output current in A at a pulse frequency of**							
kW	2 kHz	4 kHz	6 kHz	8 kHz	10 kHz	12 kHz	14 kHz	16 kHz
0.75	2.1	2.1	2.1	2.1	1.05	1.05	1.05	1.05
2.2	5.9	5.9	5.9	5.9	5.3	5.3	5,3	5.3

Output	Rated output current in A at a pulse frequency of							
4.0	10.2	10.2	10.2	10.2	5.1	5.1	5.1	5.1

The current data apply to an ambient temperature of 50 °C unless specified otherwise.