

Sensorless control of permanent magnet AC motors

AC650S series

0.25 to 7.5 kW



Description

The Parker SSD AC650S series offers simple and effective control of sensorless permanent-magnet AC motors up to 7 kW without the need for additional speed sensors.

Cost-Effective motor control

Permanent-magnet motors are inherently more compact and energy-efficient than AC induction motors but have traditionally required more complex speed control.

Easy installation and commissioning

The AC650S provides preset parameters suitable for most common uses. When used in conjunction with the Parker NX series of brushless motors, the AC650S provides optimum control in a wide range of applications such as pumps, fans, compressors, conveyors and machine tools.

Designed for optimum performance with Parker SSD Parvex NX or NX range of brushless servomotors

Power ranges 0.25 to 7.5 kW

Supply voltage 230Vac or 400Vac

Designed to operate without additional speed sensor

Pre-programmed application macros allowing quick and simple setup

Profibus-DP and Modbus RTU connectivity available

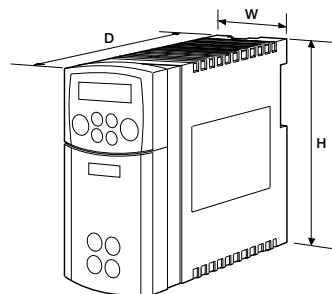
Integrated operator/programming controls with option for remote mounting

Fully configurable with graphical software tools such as DSE lite

Meets CE and UL

Technical specifications	
Power supply	Single phase units : 220-240Vac ±10%, 50-60Hz ±5% Three phase units : 380-460Vac ±10%, 50-60Hz ±5%
Ambient	0.-40°C (derate to 50°C) Up to 1000m ASL (derate >1000m) IP20 protected
Output frequency	0-500Hz
Inputs / outputs	2 x 0-10V, 0-10V/4-20mA (summing) AI 2 x 0-10V, AO, 5 x DI, 2 x DI/O, 1 x RO
Communications Options	RS485/RS232 PROFIBUS DP, Modbus RTU
Standards	The AC650S series meets the following standards when installed in accordance with the relevant product manual. <ul style="list-style-type: none"> • CE Marked to EN50178 (Safety, Low Voltage Directive). • CE Marked to EN61800-3 (EMC Directive). • UL Listed to US standard UL508C). • cUL Listed to Canadian standard C22.2 #14.

Dimensions			
Frame size	H	W	D
1	137	73	142
2	192	73	173
3	257	96	195



Frame 1, 2, 3

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Drive ratings

Product code	Supply voltage	Rated power (kW / HP)	Output current (A)	Frame	Overload
650S-21140010-0■1P00-A1	230V 1ph.	0.75 / 1.0	4	1	150% x 30 sec
650S-21170020-0■1P00-A1		1.5 / 2.0	7	2	
650S-43125020-B■1P00-A1	400V 3ph.	0.75 / 1.0	2,5	2	
650S-43155020-B■1P00-A1		2.2 / 3.0	5,5	2	
650S-43190030-B■1P00-A1		4.0 / 5.0	9	3	
650S-43216030-B■1P00-A1		7.5 / 10	16	3	
See below other models available for special order (minimum quantities apply) – Please consult your nearest Parker contact					
650S-21115010-0■1P00-A1	230V 1ph.	0.25 / 0.3	1,5	1	150% x 30 sec
650S-21122010-0■1P00-A1		0.37 / 0.5	2,2	1	
650S-21130010-0■1P00-A1		0.55 / 0.75	3	1	
650S-21155020-0■1P00-A1		1.1 / 1.5	5,5	2	
650S-43115020-B■1P00-A1	400V 3ph.	0.37 / 0.5	1,5	2	
650S-43120020-B■1P00-A1		0.55 / 0.75	2	2	
650S-43135020-B■1P00-A1		1.1 / 1.5	3,5	2	
650S-43145020-B■1P00-A1		1.5 / 2.0	4,5	2	
650S-43168030-B■1P00-A1		3.0 / 4.0	6,8	3	
650S-43212030-B■1P00-A1		5.5 / 7.5	12	3	

■ = 0 for drives without EMC filter ; ■ = F for drives fitted with built-in EMC filter

4



NX Permanent-Magnet motors

- Compact framesize
- High torque density
- Speeds up to 30.000 rpm
- Lower energy consumption
- Power range : 0.25 kW to 7 kW



EX - Atex PM motors

- “d” flameproof equipment compliant with ATEX 94/9/CE
- Compact framesize
- Integrated thermal protection
- Lower energy consumption
- Power range : 0.25 kW to 4 kW

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Product coding scheme

650S series					Block 1	Block 2	Block 3	Block 4
					650S			
Family	650S drive for sensorless servo control (frame 1-3)				650S			
	Supply voltage	kW	Output Current	Frame Size				
Rating data	230v 1ph				21			
		0.25	1.5	1		1150 1		
		0.37	2.2	1		1220 1		
		0.55	3.0	1		1300 1		
		0.75	4.0	1		1400 1		
		1.1	5.5	2		1550 2		
		1.5	7.0	2		1700 2		
	400/460v 3ph				43			
		0.37	1.5	2		1150 2		
		0.55	2.0	2		1200 2		
		0.75	2.5	2		1250 2		
		1.1	3.5	2		1350 2		
		1.5	4.5	2		1450 2		
		2.2	5.5	2		1550 2		
		3.0	6.8	3		1680 3		
		4.0	9.0	3		1900 3		
		5.5	12.0	3		2120 3		
		7.5	16.0	3		2160 3		
Auxiliary supply	Not required						0	
Brake switch	Not Fitted (mandatory on Frame 1 & 2 products)						0	
	Brake switch fitted (mandatory on frame 2 400V products and all frame 3)						B	
Filter	Not fitted (Optional on frames 1-3)						0	
	Filter fitted (Optional on frames 1-3 only)						F	
Comms	RS232 port fitted						1	
Mechanical style	Panel Mount						P	
Special option	None						00	
	Documented special options (01-99)							
Destination	English (50Hz)							A
Keypad	6511 TTL fitted (standard)							1