

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

PRODUCT BRAND

Siemens

PRODUCT MODEL

6SL3210-5FB10-4UF1

Siemens 6SL3210-5FB10-4UF1 is a 200 V SINAMICS V90 PROFINET servo drive for a 0.4 kW motor. It is a frame-size FSB converter used in a matched V90 and SIMOTICS S-1FL6 servo system.

OFFICIAL SOURCE

SINAMICS V90, SIMOTICS S-1FL6 Operating Instructions

A5E37208830-009

[Open current Siemens source](#)

General information

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The SINAMICS V90 drives with the PROFINET interface (referred to as SINAMICS V90 PN) are available in two variants, 400 V variant and 200 V variant.

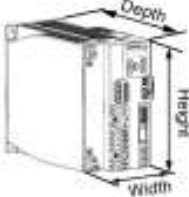
The 200 V variant is available in four frame sizes: FSA, FSB, FSC, and FSD. Frame sizes A, B, and C are used on the single phase or three phase power network while frame size D is used on the three phase power network only.

The 400 V variant is available in four frame sizes: FSAA, FSA, FSB, and FSC. All the frame sizes are used on three phase power network only.

2.1 Scope of delivery

2.1.1 Drive components

Components in the SINAMICS V90 PN 200 V variant drive package

Component	Illustration	Rated power (kW)	Outline dimension (Width x Height x Depth, mm)	Frame size	Article number
SINAMICS V90 PN, single/three-phase, 200 V		0.1/0.2	45 x 170 x 170	FSA	6SL3210-5FB10-1UF2 6SL3210-5FB10-2UF2
		0.4	55 x 170 x 170	FSB	6SL3210-5FB10-4UF1
		0.75	80 x 170 x 195	FSC	6SL3210-5FB10-8UF0
		1.0/1.5/2.0	95 x 170 x 195	FSD	6SL3210-5FB11-0UF1 6SL3210-5FB11-5UF0 6SL3210-5FB12-0UF0
Connectors		For FSA and FSB			
		For FSC and FSD			
Shielding plate		For FSA and FSB			
		For FSC and FSD			
User documentation	Information Guide	English-Chinese bilingual version			

2.2 Device combination

V90 PN 200 V servo system

SIMOTICS S-1FL6 low inertia servo motors						SINAMICS V90 PN 200 V servo drives		MOTION-CONNECT 300 pre-assembled cables						
Rated torque (Nm)	Rated power (kW)	Rated speed (rpm)	Shaft height (mm)	Article No. 1FL 60		Article No. 6SL3210-5	Frame size	Article No. 6FX3002-5	Article No. 6FX3002-5	Encoder cable				
0.16	0.05	3000	20	22-2AF21-1	☐ ☐ 1	FB10-1UF2	FSA	CK01-....	BK02-....	☐ ☐	20-....			
0.32	0.1	3000		24-2AF21-1	☐ ☐ 1									
0.64	0.2	3000	30	32-2AF21-1	☐ ☐ 1	FB10-2UF2								
1.27	0.4	3000		34-2AF21-1	☐ ☐ 1	FB10-4UF1	FSB							
2.39	0.75	3000	40	42-2AF21-1	☐ ☐ 1	FB10-8UF0	FSC							
3.18	1	3000		44-2AF21-1	☐ ☐ 1	FB11-0UF1	FSD	CK31-....	BL02-....	☐ ☐	10-....			
4.78	1.5	3000	50	52-2AF21-0 ¹⁾	☐ ☐ 1	FB11-5UF0								
6.37	2	3000		54-2AF21-0 ¹⁾	☐ ☐ 1	FB12-0UF0								
4.78	1.5	3000	50	52-2AF21-2 ²⁾	☐ ☐ 1	FB11-5UF0		CK32-....	BL03-....	☐ ☐	12-....			
6.37	2	3000		54-2AF21-2 ²⁾	☐ ☐ 1	FB12-0UF0								
Incremental encoder TTL 2500 ppr					A			Incremental encoder TTL 2500 ppr		CT				
Absolute encoder single-turn 21-bit					M			Absolute encoder single-turn 21-bit		DB				
Absolute encoder 20-bit + 12-bit multi-turn					L			Absolute encoder 20-bit + 12-bit multi-turn						
Cable length ³⁾														
3 m								1AD0						
5 m								1AF0						
10 m								1BA0						
20 m								1CA0						

¹⁾ Low inertia motor with straight connectors

²⁾ Low inertia motor with angular connectors

³⁾ The last four numbers in the cable article number (....)

Specific technical data

Article No. 6SL3210-5FB...		10-1UF2	10-2UF2	10-4UF1	10-8UF0	11-0UF1	11-5UF0	12-0UF0
Frame size		FSA	FSA	FSB	FSC	FSD	FSD	FSD
Rated output current (A)		1.2	1.4	2.6	4.7	6.3	10.6	11.6
Max. output current (A)		3.6	4.2	7.8	14.1	18.9	31.8	34.8
Max. supported motor power (kW)		0.1	0.2	0.4	0.75	1.0	1.5	2.0
Output frequency (Hz)		0 to 330						
Cooling type		Self-cooled				Fan-cooled		
Outline dimensions (W x H x D, mm)		45 x 170 x 170		55 x 170 x 170	80 x 170 x 195	95 x 170 x 195		
Weight (kg)		1.1		1.25	1.95	2.3	2.4	
Power loss ¹⁾								
Main circuit (W)		8	15	33	48	65	105	113
Regenerative resistor (W)		5	5	7	9	13	25	25
Control circuit (W)		16	16	16	16	16	18	18
Total (W)		29	36	56	73	94	148	156
Mains power supply								
Voltage/frequency		FSA, FSB and FSC: single phase/three phase 200 V AC to 240 V AC, 50/60 Hz FSD: three phase 200 V AC to 240 V AC, 50/60 Hz						
Permissible voltage fluctuation		-15% to +10%						
Permissible frequency fluctuation		-10% to +10%						
Permissible supply configuration		TN, TT, IT						
Short-circuit current (SCCR)		Maximum permissible short-circuit current: 100 kA rms Minimum required short-circuit current: 5 kA rms						
Rated input current (A)	1-phase	2.5	3.0	5.0	10.4	-	-	-
	3-phase	1.5	1.8	3.0	5.0	7.0	11.0	12.0
Power supply capacity (kVA)	1-phase	0.5	0.7	1.2	2.0	-	-	-
	3-phase	0.5	0.7	1.1	1.9	2.7	4.2	4.6
Inrush current (A)		8.0						
24 V DC power supply								
Voltage (V)		24 (-15% to +20%) ²⁾						
Maximum current (A)		When using a motor without a brake: 1.5 A When using a motor with a brake: 1.5 A + motor holding brake rated current (See Section "Technical data - servo motors (Page 61)".)						
Ripple caused by the rectifier		≤ 5%						
Safety insulation class		PELV						

¹⁾ The values here are calculated at rated load.

²⁾ When SINAMICS V90 PN works with a motor with a brake, the voltage tolerance of 24 V DC power supply must be -10% to +10% to meet the voltage requirement of the brake.