

SINAMICS G120 standard inverters

0.37 kW to 250 kW (0.5 hp to 400 hp)

Power Modules

Technical specifications

Line voltage 380 ... 480 V 3 AC		PM240 Power Modules				
Without integrated line filter		6SL3224-0BE22-2UA0	6SL3224-0BE23-0UA0	6SL3224-0BE24-0UA0	6SL3224-0BE25-5UA0	6SL3224-0BE27-5UA0
With integrated line filter		6SL3224-0BE22-2AA0	6SL3224-0BE23-0AA0	6SL3224-0BE24-0AA0	6SL3224-0BE25-5AA0	6SL3224-0BE27-5AA0
Output current at 50 Hz 400 V 3 AC						
• Rated current I_{rated} ¹⁾	A	5.9	7.7	10.2	18	25
• Base-load current I_L ¹⁾	A	5.9	7.7	10.2	18	25
• Base-load current I_H ²⁾	A	5.9	7.7	10.2	13.2	19
• I_{max}	A	11.8	15.4	20.4	26.4	38
Rated power						
• Based on I_L	kW (hp)	2.2 (3.0)	3 (4)	4 (5)	7.5 (10)	11 (15)
• Based on I_H	kW (hp)	2.2 (3.0)	3 (4)	4 (5)	5.5 (7.5)	7.5 (10)
Rated pulse frequency	kHz	4	4	4	4	4
Efficiency η		0.95	0.95	0.95	0.95	0.95
Power loss at rated current	kW	0.14	0.16	0.18	0.24	0.30
Cooling air requirement	m ³ /s (ft ³ /s)	0.024 (0.85)	0.024 (0.85)	0.024 (0.85)	0.055 (1.94)	0.055 (1.94)
Sound pressure level L_{pA} (1 m)	dB	<50	<50	<50	<60	<60
24 V DC power supply for the Control Unit	A	1	1	1	1	1
Rated input current ³⁾						
• With line reactor	A	6.1	8	10.4	18.7	26
• Without line reactor	A	7.6	10.2	13.4	21.9	31.5
Length of cable to braking resistor, max.	m (ft)	15 (49)	15 (49)	15 (49)	15 (49)	15 (49)
Line supply connection U1/L1, V1/L2, W1/L3		Screw terminals	Screw terminals	Screw terminals	Screw terminals	Screw terminals
• Conductor cross-section	mm ²	1 ... 6	1 ... 6	1 ... 6	2.5 ... 10	2.5 ... 10
Motor connection U2, V2, W2		Screw terminals	Screw terminals	Screw terminals	Screw terminals	Screw terminals
• Conductor cross-section	mm ²	1 ... 6	1 ... 6	1 ... 6	2.5 ... 10	2.5 ... 10
DC link connection, connection for braking resistor DCP/R1, DCN, R2		Screw terminals	Screw terminals	Screw terminals	Screw terminals	Screw terminals
• Conductor cross-section	mm ²	1 ... 6	1 ... 6	1 ... 6	2.5 ... 10	2.5 ... 10
PE connection		On housing with M5 screw	On housing with M5 screw	On housing with M5 screw	On housing with M5 screw	On housing with M5 screw
Motor cable length ⁴⁾ , max.						
• Shielded	m (ft)	50 (164)	50 (164)	50 (164)	50 (164)	50 (164)
• Unshielded	m (ft)	100 (328)	100 (328)	100 (328)	100 (328)	100 (328)
Degree of protection		IP20	IP20	IP20	IP20	IP20
Dimensions						
• Width	mm (in)	153 (6.02)	153 (6.02)	153 (6.02)	189 (7.44)	189 (7.44)
• Height	mm (in)	270 (10.63)	270 (10.63)	270 (10.63)	334 (13.15)	334 (13.15)
• Depth						
- Without Control Unit	mm (in)	165 (6.50)	165 (6.50)	165 (6.50)	185 (7.28)	185 (7.28)
- With Control Unit	mm (in)	230 (9.06)	230 (9.06)	230 (9.06)	250 (9.84)	250 (9.84)
Frame size		FSB	FSB	FSB	FSC	FSC
Weight, approx.	kg (lb)	4 (8.8)	4 (8.8)	4 (8.8)	7 (15.4)	7 (15.4)

¹⁾ The rated output current I_{rated} and the base-load current I_L are based on the duty cycle for low overload (LO).

²⁾ The base-load current I_H is based on the duty cycle for high overload (HO).

³⁾ The input current depends on the motor load and line impedance. The input currents apply for a load at rated power (based on I_{rated}) for a line impedance corresponding to $u_k = 1\%$. These current values without line reactor are specified on the rating plate of the Power Module.

⁴⁾ Max. motor cable length 25 m (82 ft) (shielded) for PM240 Power Modules with integrated line filter to maintain the limit values of EN 61800-3 Category C2.

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Line voltage 380 ... 480 V 3 AC		PM240 Power Modules				
Without integrated line filter		6SL3224-0BE31-1UA0	6SL3224-0BE31-5UA0	6SL3224-0BE31-8UA0	6SL3224-0BE32-2UA0	6SL3224-0BE33-0UA0
With integrated line filter		6SL3224-0BE31-1AA0	6SL3224-0BE31-5AA0	6SL3224-0BE31-8AA0	6SL3224-0BE32-2AA0	6SL3224-0BE33-0AA0
Output current at 50 Hz 400 V 3 AC						
• Rated current $I_{rated}^{1)}$	A	32	38	45	60	75
• Base-load current $I_L^{1)}$	A	32	38	45	60	75
• Base-load current $I_H^{2)}$	A	26	32	38	45	60
• I_{max}	A	52	64	76	90	124
Rated power						
• Based on I_L	kW (hp)	15 (20)	18.5 (25)	22 (30)	30 (40)	37 (50)
• Based on I_H	kW (hp)	11 (15)	15 (20)	18.5 (25)	22 (30)	30 (40)
Rated pulse frequency	kHz	4	4	4	4	4
Efficiency η		>0.97	>0.97	>0.97	>0.97	>0.97
Power loss at rated current	kW	0.4	0.42	0.52	0.69	0.99
Cooling air requirement	m ³ /s (ft ³ /s)	0.055 (1.94)	0.055 (1.94)	0.055 (1.94)	0.055 (1.94)	0.055 (1.94)
Sound pressure level L_{pA} (1 m)	dB	<60	<60	<60	<61	<60
24 V DC power supply for the Control Unit	A	1	1	1	1	1
Rated input current ³⁾						
• With line reactor	A	33	40	47	63	78
• Without line reactor	A	39	46	53	72	88
Length of cable to braking resistor, max.	m (ft)	15 (49)	15 (49)	15 (49)	15 (49)	15 (49)
Line supply connection U1/L1, V1/L2, W1/L3		Screw terminals	M6 screw studs	M6 screw studs	M6 screw studs	M6 screw studs
• Conductor cross-section	mm ²	2.5 ... 10	10 ... 50	10 ... 50	10 ... 50	10 ... 50
Motor connection U2, V2, W2		Screw terminals	M6 screw studs	M6 screw studs	M6 screw studs	M6 screw studs
• Conductor cross-section	mm ²	2.5 ... 10	10 ... 50	10 ... 50	10 ... 50	10 ... 50
DC link connection, connection for braking resistor DCP/R1, DCN, R2		Screw terminals	M6 screw studs	M6 screw studs	M6 screw studs	M6 screw studs
• Conductor cross-section	mm ²	2.5 ... 10	10 ... 50	10 ... 50	10 ... 50	10 ... 50
PE connection		On housing with M5 screw	On housing with M6 screw	On housing with M6 screw	On housing with M6 screw	On housing with M6 screw
Motor cable length ⁴⁾, max.						
• Shielded	m (ft)	50 (164)	50 (164)	50 (164)	50 (164)	50 (164)
• Unshielded	m (ft)	100 (328)	100 (328)	100 (328)	100 (328)	100 (328)
Degree of protection		IP20	IP20	IP20	IP20	IP20
Dimensions						
• Width	mm (in)	189 (7.44)	275 (10.83)	275 (10.83)	275 (10.83)	275 (10.83)
• Height						
- Without integrated line filter	mm (in)	334 (13.15)	419 (16.50)	419 (16.50)	419 (16.50)	499 (19.65)
- With integrated line filter	mm (in)	334 (13.15)	512 (20.16)	512 (20.16)	512 (20.16)	635 (25.0)
• Depth						
- Without Control Unit	mm (in)	185 (7.28)	204 (8.03)	204 (8.03)	204 (8.03)	204 (8.03)
- With Control Unit	mm (in)	250 (9.84)	260 (10.24)	260 (10.24)	260 (10.24)	260 (10.24)
Frame size		FSC	FSD	FSD	FSD	FSE
Weight, approx.						
• Without integrated line filter	kg (lb)	7 (15.4)	13 (28.7)	13 (28.7)	13 (28.7)	16 (35.3)
• With integrated line filter	kg (lb)	7 (15.4)	16 (35.3)	16 (35.3)	16 (35.3)	23 (50.7)

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