

SINAMICS G120P pump, fan, compressor inverters

0.37 kW to 90 kW (0.5 hp to 125 hp)

PM230 Power Modules

Selection and ordering data

To ensure that a suitable Power Module is selected, the following currents should be used for applications:

- **Rated output current for applications with low overload (LO)**
- **Base-load current for applications with high overload (HO)**

The G120P drive supports most 2-pole, 4-pole and 6-pole motors rated up to 3.0 kW (4.0 hp). The drive should be selected by matching the output current to the motor FLA. For a description of the overload performance, please refer to the general technical specifications of the Power Modules.

PM230 Power Modules degree of protection IP55/UL Type 12

Rated power ¹⁾		Rated output current I _{rated} ²⁾	Power based on the base-load current ³⁾		Base-load current I _H ³⁾	Frame size	PM230 Power Module degree of protection IP55/UL Type 12 with integrated line filter class A	PM230 Power Module degree of protection IP55/UL Type 12 with integrated line filter class B
kW	hp		kW	hp				
A			A					
380 ... 480 V 3 AC								
0.37	0.50	1.3	0.25	0.33	0.9	FSA	6SL3223-0DE13-7AA0	6SL3223-0DE13-7BA0
0.55	0.75	1.7	0.37	0.5	1.3	FSA	6SL3223-0DE15-5AA0	6SL3223-0DE15-5BA0
0.75	1.0	2.2	0.55	0.75	1.7	FSA	6SL3223-0DE17-5AA0	6SL3223-0DE17-5BA0
1.1	1.5	3.1	0.75	1.0	2.2	FSA	6SL3223-0DE21-1AA0	6SL3223-0DE21-1BA0
1.5	2.0	4.1	1.1	1.5	3.1	FSA	6SL3223-0DE21-5AA0	6SL3223-0DE21-5BA0
2.2	3.0	5.9	1.5	2.0	4.1	FSA	6SL3223-0DE22-2AA0	6SL3223-0DE22-2BA0
3.0	4.0	7.7	2.2	3.0	5.9	FSA	6SL3223-0DE23-0AA0	6SL3223-0DE23-0BA0
4.0	5.0	10.2	3.0	4.0	7.7	FSB	6SL3223-0DE24-0AA0	6SL3223-0DE24-0BA0
5.5	7.5	13.2	4.0	5.0	10.2	FSB	6SL3223-0DE25-5AA0	6SL3223-0DE25-5BA0
7.5	10	18	5.5	7.5	13.2	FSB	6SL3223-0DE27-5AA0	6SL3223-0DE27-5BA0
11.0	15	26	7.5	10	18	FSC	6SL3223-0DE31-1AA0	6SL3223-0DE31-1BA0
15.0	20	32	11.0	15	26	FSC	6SL3223-0DE31-5AA0	6SL3223-0DE31-5BA0
18.5	25	38	15.0	20	32	FSC	6SL3223-0DE31-8AA0	–
						FSD	–	6SL3223-0DE31-8BA0
22	30	45	18.5	25	38	FSD	6SL3223-0DE32-2AA0	6SL3223-0DE32-2BA0
30	40	60	22	30	45	FSD	6SL3223-0DE33-0AA0	6SL3223-0DE33-0BA0
37	50	75	30	40	60	FSE	6SL3223-0DE33-7AA0	6SL3223-0DE33-7BA0
45	60	90	37	50	75	FSE	6SL3223-0DE34-5AA0	6SL3223-0DE34-5BA0
55	75	110	45	60	90	FSF	6SL3223-0DE35-5AA0	6SL3223-0DE35-5BA0
75	100	145	55	75	110	FSF	6SL3223-0DE37-5AA0	6SL3223-0DE37-5BA0
90	125	178	75	100	145	FSF	6SL3223-0DE38-8AA0	6SL3223-0DE38-8BA0

It is essential to plug on an operator panel or the blanking cover in order to achieve degree of protection IP54/IP55/UL Type 12.

For further information, see [Operator panels and Blanking cover for PM230 Power Modules](#) in section [Supplementary system components](#).

¹⁾ Rated power based on the rated output current I_{rated} . The rated output current I_{rated} is based on the duty cycle for low overload (LO).

²⁾ The rated output current I_{rated} is based on the duty cycle for low overload (LO). These current values are valid for 400 V and are specified on the rating plate of the Power Module.

³⁾ The base-load current I_H is based on the duty cycle for high overload (HO).

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Technical specifications

Line voltage 380 ... 480 V 3 AC		PM230 Power Modules, degree of protection IP55/UL Type 12				
With integrated line filter class A		6SL3223-ODE22-2AA0	6SL3223-ODE23-0AA0	6SL3223-ODE24-0AA0	6SL3223-ODE25-5AA0	6SL3223-ODE27-5AA0
With integrated line filter class B		6SL3223-ODE22-2BA0	6SL3223-ODE23-0BA0	6SL3223-ODE24-0BA0	6SL3223-ODE25-5BA0	6SL3223-ODE27-5BA0
Output current at 50 Hz 400 V 3 AC						
• Rated current I_{rated} ¹⁾	A	5.9	7.7	10.2	13.2	18
• Base-load current I_L ¹⁾	A	5.9	7.7	10.2	13.2	18
• Base-load current I_H ²⁾	A	4.1	5.9	7.7	10.2	13.2
• I_{max}	A	8.9	11.8	15.4	20.4	27
Rated power						
• Based on I_L	kW (hp)	2.2 (3.0)	3 (4.0)	4 (5.0)	5.5 (7.5)	7.5 (10)
• Based on I_H	kW (hp)	1.5 (2.0)	2.2 (3.0)	3 (4.0)	4 (5.0)	5.5 (7.5)
Rated pulse frequency		kHz	4	4	4	4
Efficiency η			0.96	0.96	0.97	0.97
Power loss at rated current		kW	0.1	0.12	0.14	0.18
Cooling air requirement		m ³ /s (ft ³ /s)	0.007 (0.25)	0.007 (0.25)	0.009 (0.32)	0.009 (0.32)
Sound pressure level L_{pA} (1 m)		dB	61.9	61.9	62.8	62.8
24 V DC power supply for the Control Unit		A	1	1	1	1
Input current ³⁾						
• Rated current	A	6.1	8	11	14	19
• Based on I_H	A	4.2	6.1	8	11	14
Line supply connection U1/L1, V1/L2, W1/L3						
• Conductor cross-section	mm ²	Screw terminals, plug-in 1 ... 2.5	Screw terminals, plug-in 1 ... 2.5	Screw terminals, plug-in 2.5 ... 6	Screw terminals, plug-in 4 ... 6	Screw terminals, plug-in 4 ... 6
Motor connection U2, V2, W2						
• Conductor cross-section	mm ²	Screw terminals, plug-in 1 ... 2.5	Screw terminals, plug-in 1 ... 2.5	Screw terminals, plug-in 2.5 ... 6	Screw terminals, plug-in 4 ... 6	Screw terminals, plug-in 4 ... 6
Motor cable length, max. ⁴⁾						
• Shielded	m (ft)	25 (82)	25 (82)	25 (82)	25 (82)	25 (82)
• Unshielded	m (ft)	100 (328)	100 (328)	100 (328)	100 (328)	100 (328)
Degree of protection ⁵⁾		IP55/UL Type 12	IP55/UL Type 12	IP55/UL Type 12	IP55/UL Type 12	IP55/UL Type 12
Dimensions						
• Width	mm (in)	154 (6.06)	154 (6.06)	180 (7.09)	180 (7.09)	180 (7.09)
• Height	mm (in)	460 (18.11)	460 (18.11)	540 (21.26)	540 (21.26)	540 (21.26)
• Depth						
- Without operator panel	mm (in)	249 (9.80)	249 (9.80)	249 (9.80)	249 (9.80)	249 (9.80)
- With operator panel, max.	mm (in)	264 (10.39)	264 (10.39)	264 (10.39)	264 (10.39)	264 (10.39)
Frame size		FSA	FSA	FSB	FSB	FSB
Weight, approx.		kg (lb)	4.3 (9.5)	4.3 (9.5)	6.3 (13.9)	6.3 (13.9)

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 and applies for a line impedance corresponding to $u_K = 1\%$. The rated input currents apply for a load at rated power (based on I_{rated}) – these current values are specified on the rating plate.

⁴⁾ Max. motor cable length 25 m (82 ft) (shielded) for PM230 Power Modules with integrated line filter to maintain the limit values of EN 61800-3 Category C2 (filter A) or C1 table 14 (filter B). With unshielded cables, Categories C2 and C1 are not achieved.

⁵⁾ It is essential to plug on an operator panel or the blanking cover in order to achieve degree of protection IP54/IP55/UL Type 12.
For further information, see [Operator panels and Blanking cover for PM230 Power Modules](#) in section [Supplementary system components](#).