# SIEMENS

Data sheet for SINAMICS G120X

### Article No. :

### 6SL3220-1YC16-0UF0



Figure similar

Client order no. :
Order no. :
Offer no. :
Remarks :

Rate	ed data	
Input		
Number of phases	3 AC	
Line voltage	200 240 V +10	0%-20%
Line frequency	47 63 Hz	
Rated voltage	200V IEC	240V NEC
Rated current (LO)	9.60 A	9.60 A
Rated current (HO)	6.70 A	6.70 A
Output		
Number of phases	3 AC	
Rated voltage	200V IEC	240V NEC <sup>1)</sup>
Rated power (LO)	2.20 kW	3.00 hp
Rated power (HO)	1.50 kW	2.00 hp
Rated current (LO)	10.40 A	10.40 A
Rated current (HO)	7.40 A	7.40 A
Rated current (IN)	10.80 A	
Max. output current	14.10 A	
Pulse frequency	4 kHz	
Output frequency for vector control	0 200 Hz	
Output frequency for V/f control	0 550 Hz	

#### **Overload capability**

Low Overload (LO)

110% base load current IL for 60 s in a 300 s cycle time

High Overload (HO)

150% x base load current IH for 60 s within a 600 s cycle time

General tech	. specifications	
Power factor $\lambda$	0.70 0.85	
Offset factor $\cos \phi$	0.96	
Efficiency η	0.96	
Sound pressure level (1m)	63 dB	
Power loss 3)	0.123 kW	
Filter class (integrated)	Unfiltered	
EMC category (with accessories)	without	
Safety function "Safe Torque Off"	without SIRIUS device (e.g. via S7- 1500F)	
Communication		

Communication

PROFINET, EtherNet/IP

ltem no. : Consignment no. : Project :

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Inputs / outputs			
Standard digital inputs			
Number	6		
Switching level: $0 \rightarrow 1$	11 V		
Switching level: $1 \rightarrow 0$	5 V		
Max. inrush current	15 mA		
Fail-safe digital inputs			
Number	1		
Digital outputs			
Number as relay changeover contact	2		
Output (resistive load)	DC 30 V, 5.0 A		
Number as transistor	0		
Analog / digital inputs			
Number	2 (Differential input)		
Resolution	10 bit		
Switching threshold as digital input			
$0 \rightarrow 1$	4 V		
$1 \rightarrow 0$	1.6 V		
Analog outputs			
Number	1 (Non-isolated output)		
PTC/ KTY interface			
1 motor temperature sensor input, ser Thermo-Click, accuracy $\pm 5~^\circ\text{C}$	nsors that can be connected PTC, KTY and		
Closed-loop co	ntrol techniques		

	nior teeningues
V/f linear / square-law / parameterizable	Yes
V/f with flux current control (FCC)	Yes
V/f ECO linear / square-law	Yes
Sensorless vector control	Yes
Vector control, with sensor	No
Encoderless torque control	No
Torque control, with encoder	No

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Ambient conditions			
Standard board coating type	Class 3C2, according to IEC 60721-3-3: 2002		
Cooling	Air cooling using an integrated fan		
Cooling air requirement	0.009 m³/s (0.325 ft³/s)		
Installation altitude	1,000 m (3,280.84 ft)		
Ambient temperature			
Operation	-20 45 °C (-4 113 °F)		
Transport	-40 70 °C (-40 158 °F)		
Storage	-25 55 °C (-13 131 °F)		
Relative humidity			
Max. operation	95 % At 40 °C (104 °F), condensation and icing not permissible		
Co	onnections		
Signal cable			
Conductor cross-section	0.15 1.50 mm² (AWG 24 AWG 16)		
Line side			
Version	screw-type terminal		
Conductor cross-section	1.50 6.00 mm <sup>2</sup> (AWG 16 AWG 10)		
Motor end			
Version	Screw-type terminals		
Conductor cross-section	1.50 6.00 mm² (AWG 16 AWG 10)		
DC link (for braking resistor)			
PE connection	On housing with M4 screw		
Max. motor cable length			
Shielded	150 m (492.13 ft)		
Unshielded	300 m (984.25 ft)		

Me	echanical data		
Degree of protection	IP20 / UL open type		
Frame size	FSB		
Net weight	5.8 kg (12.79 lb)		
Dimensions			
Width	100 mm (3.94 in)		
Height	275 mm (10.83 in)		
Depth	218 mm (8.58 in)	218 mm (8.58 in)	
	Standards		
Compliance with standards	UL, cUL, CE, C-Tick (RCM), SEMI F47, REACH	UL, cUL, CE, C-Tick (RCM), EAC, KCC, SEMI F47, REACH	
CE marking		EMC Directive 2004/108/EC, Low- Voltage Directive 2006/95/EC	
Converter le	osses to IEC61800-9-2*		
Efficiency class	IE2	IE2	
Comparison with the reference converter (90% / 100%)	42.4 %		
■ 94.0 W (2.2 %)	106.0 W (2.5 %) 123.0 W	(2.8%)	
100%	•		
70 5 W (1 6 %)	763W(18%)	10%	
50% •	76.3 W (1.8 %) 83.4 W (	1.9 %)	
	76.3 W (1.8 %) 83.4 W (	1.9 %)	

The percentage values show the losses in relation to the rated apparent power of the converter.

90% **f** 

50%

The diagram shows the losses for the points (as per standard IEC61800-9-2) of the relative torque generating current (I) over the relative motor stator frequency (f). The values are valid for the basic version of the converter without options/components.

\*converted values

<sup>1)</sup>The output current and HP ratings are valid for the voltage range 220V-240V

<sup>3)</sup> Typical value. More information can be found in the element group "Converter losses to IEC 61800-9-2" in this datasheet.