

Data sheet for SINAMICS G120X

Article No.: 6SL3220-3YE20-0UF0

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

Rated data			
Input			
Number of phases	3 AC		
Line voltage	380 480 V +10 %	-20 %	
Line frequency	47 63 Hz		
Rated voltage	400V IEC	480V NEC	
Rated current (LO)	9.75 A	8.00 A	
Rated current (HO)	7.75 A	6.50 A	
Output			
Number of phases	3 AC		
Rated voltage	400V IEC	480V NEC 1)	
Rated power (LO)	4.00 kW	5.00 hp	
Rated power (HO)	3.00 kW	4.00 hp	
Rated current (LO)	10.20 A	7.60 A	
Rated current (HO)	7.70 A	6.20 A	
Rated current (IN)	10.50 A		
Max. output current	14.00 A		
Pulse frequency	4 kHz		
Output frequency for vector control	0 200 Hz		
Output frequency for V/f control	0 550 Hz		
Overload capability			

Overioa	а сара	ability

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 λ	0.70 0.85	
Offset factor $\cos\phi$	0.96	
Efficiency η	0.97	
Sound pressure level (1m)	63 dB	
Power loss 3)	0.142 kW	
Filter class (integrated)	Unfiltered	
EMC category (with accessories) without	without	
Safety function "Safe Torque Off"	without	
Communication		

Communication

Item no.: Consignment no. : Project :

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 → 1	4 V		
1 → 0	1.6 V		
Analog outputs			
Number	1 (Non-isolated output)		
PTC/ KTY interface			

PTC/ KTY interface

1 motor temperature sensor input, sensors that can be connected PTC, KTY and Thermo-Click, accuracy $\pm 5~^\circ\text{C}$

Closed-loop control techniques		
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	

PROFINET, EtherNet/IP



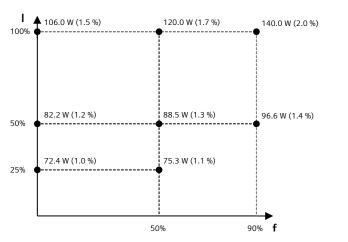
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Ambient conditions		
Standard board coating type	Class 3C2, according to IEC 60721-3-3: 2002	
Cooling	Air cooling using an integrated fan	
Cooling air requirement	0.005 m ³ /s (0.177 ft ³ /s)	
Installation altitude	1,000 m (3,280.84 ft)	
Ambient temperature		
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	
Conn	ections	
Signal cable		
Conductor cross-section	0.15 1.50 mm ² (AWG 24 AWG 16)	
Line side		
Version	screw-type terminal	
Conductor cross-section	1.50 6.00 mm ² (AWG 16 AWG 10)	
Motor end		
Version	Screw-type terminals	
Conductor cross-section	1.50 6.00 mm ² (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)	

	Mechan	ical data
Degree of protection		IP20 / UL open type
Frame size		FSB
Net weight		5.83 kg (12.85 lb)
Dimensions		
	Width	100 mm (3.94 in)
	Height	275 mm (10.83 in)
	Depth	218 mm (8.58 in)
Standards		
Compliance with standards		UL, cUL, CE, C-Tick (RCM), EAC, KCC, SEMI F47, REACH
CE marking		EMC Directive 2004/108/EC, Low-Voltage Directive 2006/95/EC





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

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

 $^{^{1)}}$ The output current and HP ratings are valid for the voltage range 440V-480V

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



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	Operator panel: I	ntelligent Operator Panel (IOP-2
	Screen	
Display design	LCD color	Ambient temperature
Screen resolution	320 x 240 Pixel	Operation
Mechanical data		Storage
Degree of protection	IP55 / UL type 12	Transport
Net weight	0.134 kg (0.30 lb)	Relative humidity at 25
Dimensions		Max. operation
Width	70.00 mm (2.76 in)	SA Operation
Height	106.85 mm (4.21 in)	
Depth	19.65 mm (0.77 in)	Certificate of suitability

Ambient conditions		
Ambient temperature		
Operation	0 50 °C (32 122 °F)	
	55 °C only with door installation kit	
Storage	-40 70 °C (-40 158 °F)	
Transport	-40 70 °C (-40 158 °F)	
Relative humidity at 25°C during		
Max. operation	95 %	
Approvals		
Certificate of suitability CE, cULus, EAC, KCC, RCM		