SIEMENS

Data sheet for SINAMICS G120X

Article No. :

6SL3220-3YE10-0AF0



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

Rated data		
Input		
Number of phases	3 AC	
Line voltage	380 480 V +10 9	% -20 %
Line frequency	47 63 Hz	
Rated voltage	400V IEC	480V NEC
Rated current (LO)	2.10 A	2.00 A
Rated current (HO)	1.70 A	1.60 A
Output		
Number of phases	3 AC	
Rated voltage	400V IEC	480V NEC ¹⁾
Rated power (LO)	0.75 kW	1.00 hp
Rated power (HO)	0.55 kW	0.75 hp
Rated current (LO)	2.20 A	2.10 A
Rated current (HO)	1.70 A	1.60 A
Rated current (IN)	2.30 A	
Max. output current	2.70 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

Comment to all any additions		
General tech. specifications		
Power factor λ	0.70 0.85	
Offset factor $\cos \phi$	0.96	
Efficiency η	0.96	
Sound pressure level (1m)	55 dB	
Power loss ³⁾	0.043 kW	
Filter class (integrated)	RFI suppression filter for Category C2	
EMC category (with accessories)	Category C2	
Safety function "Safe Torque Off"	without SIRIUS device (e.g. via S7- 1500F)	

Communication

Communication

PROFINET, EtherNet/IP

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

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	

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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 m³/s (0.177 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 2.50 mm² (AWG 16 AWG 14)
Motor end	
Version	Screw-type terminals
Conductor cross-section	1.50 2.50 mm² (AWG 16 AWG 14)
DC link (for braking resistor)	
PE connection	On housing with M4 screw
Max. motor cable length	
Shielded	150 m (492.13 ft)

Ме	chanical data	
Degree of protection	IP20 / UL open type	
Frame size	FSA	
Net weight	3.4 kg (7.50 lb)	
Dimensions		
Width	73 mm (2.87 in)	
Height	232 mm (9.13 in)	
Depth	218 mm (8.58 in)	
	Standards	
Compliance with standards	UL, cUL, CE, C-Tick (RCM), EAC, SEMI F47, REACH	, KCC,
CE marking	EMC Directive 2004/108/EC, Lc Voltage Directive 2006/95/EC)W-
Converter lo	osses to IEC61800-9-2*	
Efficiency class	IE2	
Comparison with the reference converter (90% / 100%)	29.6 %	
■ 35.6 W (2.3 %) 100% ●	38.4 W (2.5 %) 42.9 W (2.8 °	%)
31.0 W (2.0 %)	32.2 W (2.1 %) 33.9 W (2.2 %	%)
29.1 W (1.9 %)	29.6 W (1.9 %)	
	↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	

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.

*calculated 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 pan	el: Intelligen
Screen		
Display design	LCD color	
Screen resolution	320 x 240 Pixel	
Mechanical data		
Degree of protection	IP55 / UL type 12	
Net weight	0.134 kg (0.30 lb)	
Dimensions		
Width	70.00 mm (2.76 in)	
Height	106.85 mm (4.21 in)	
Depth	19.65 mm (0.77 in)	

Ambient conditions Ambient temperature		
	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 durir	ıg	
Max. operation	95 %	
	Approvals	
Certificate of suitability	CE, cULus, EAC, KCC, RCM	