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Data sheet for SINAMICS G120X

Article No. :

6SL3220-3YE40-0AF0



Figure similar

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)	104.00 A	91.00 A
Rated current (HO)	94.00 A	80.00 A
Output		
Number of phases	3 AC	
Rated voltage	400V IEC	480V NEC ¹⁾
Rated power (LO)	55.00 kW	75.00 hp
Rated power (HO)	45.00 kW	60.00 hp
Rated current (LO)	110.00 A	96.00 A
Rated current (HO)	90.00 A	77.00 A
Rated current (IN)	113.00 A	
Max. output current	149.00 A	
Pulse frequency	4 kHz	
Output frequency for vector control	0 200 Hz	
Output frequency for V/f control	0 550 Hz	

Overload capability

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	0.90 0.95	
Offset factor $\cos \phi$	0.99	
Efficiency η	0.97	
Sound pressure level (1m)	70 dB	
Power loss ³⁾	1.730 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

ltem 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, set Thermo-Click, accuracy $\pm 5~^\circ C$	nsors that can be connected PTC, KTY and	
Closed-loop co	ntrol techniques	

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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Ambie	ent conditions
Standard board coating type	Class 3C2, according to IEC 60721-3-3: 2002
Cooling	Air cooling using an integrated fan
Cooling air requirement	0.083 m³/s (2.931 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	25.00 70.00 mm² (AWG 6 AWG 3/0)
Motor end	
Version	Screw-type terminals
Conductor cross-section	25.00 70.00 mm² (AWG 6 AWG 3/0)
DC link (for braking resistor)	
PE connection	Screw-type terminals
Max. motor cable length	
Shielded	150 m (492.13 ft)

Mechanical data		
Degree of protection	IP20 / UL open t	type
Frame size	FSE	
Net weight	29 kg (63.93 lb)
Dimensions		
Width	275 mm (10.83	in)
Height	551 mm (21.69) in)
Depth	248 mm (9.76 i	n)
	Standards	
Compliance with standards	UL, cUL, CE, C-T SEMI F47, REAC	ick (RCM), EAC, KCC, H
CE marking	EMC Directive 2 Voltage Directiv	2004/108/EC, Low- /e 2006/95/EC
Converte	r losses to IEC61800-9)-2*
Efficiency class	IE2	
Comparison with the reference converter (90% / 100%)	48.3 %	
I ▲ 1,190.0 W (1.6 %) 100% ●	1,390.0 W (1.8 %)	1,730.0 W (2.3 %)
661.0 W (0.9 %) 50% ●	733.0 W (1.0 %)	∳ ^{841.0 W (1.1 %)}
482.0 W (0.6 %)	512.0 W (0.7 %)	
L	50%	90% f

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	