

SIEMENS

Data sheet for SINAMICS G120X

Article No. : **6SL3220-3YE28-0UF0**

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

Item no. :

Consignment no. :
Project :



Figure similar

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)	29.50 A	26.00 A
Rated current (HO)	24.50 A	21.30 A

Output

Number of phases	3 AC
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Rated voltage **400V IEC** **480V NEC₁**

Rated power (LO)	15.00 kW	20.00 hp
Rated power (HO)	11.00 kW	15.00 hp
Rated current (LO)	32.00 A	27.00 A
Rated current (HO)	26.00 A	21.00 A
Rated current (IN)	33.00 A	
Max. output current	43.00 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	0.70 ... 0.85
Offset factor $\cos \phi$	0.96
Efficiency η	0.98
Sound pressure level (1m)	67 dB
Power loss ₃	0.438 kW
Filter class (integrated)	Unfiltered
EMC category (with accessories)	without

Ambient conditions

Standard board coating type	Class 3C2, according to IEC 60721-3-3:2002
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Cooling	Air cooling using an integrated fan
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Cooling air requirement	0.018 m³/s (0.653 ft³/s)
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Installation altitude	1,000 m (3,280.84 ft)
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Ambient temperature

Operation	-20 ... 45 °C (-4 ... 113 °F)
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Transport	-40 ... 70 °C (-40 ... 158 °F)
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Storage	-25 ... 55 °C (-13 ... 131 °F)
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Relative humidity

Max. operation	95 % At 40 °C (104 °F), condensation and icing not permissible
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Mechanical data

Degree of protection	IP20 / UL open type
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Size	FSC
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Net weight	7.14 kg (15.74 lb)
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Dimensions

Width	140 mm (5.51 in)
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Height	295 mm (11.61 in)
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Depth	218 mm (8.58 in)
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Inputs / outputs

Standard digital inputs

Number	6
Switching level: 0 → 1	11 V
Switching level: 1 → 0	5 V
Max. inrush current	15 mA

Fail-safe digital inputs

Number	1
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Digital outputs

Number as relay changeover contact 2Output (resistive load)	DC 30 V, 5.0 A
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Number as transistor	0
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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)
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PTC/ KTY interface

1 motor temperature sensor input, sensors that can be connected: PTC, KTY and Thermo-Click, accuracy ±5 °C
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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	Yes
Torque control, with encoder	No

Communication

Communication	PROFINET, EtherNet/IP
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Connections

Signal cable

Conductor cross-section	0.15 ... 1.50 mm ² (AWG 24 ... AWG 16)
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Line side

Version	screw-type terminal
Conductor cross-section	1.50 ... 16.00 mm ² (AWG 16 ... AWG 6)

Motor end

Version	Screw-type terminals
Conductor cross-section	1.50 ... 16.00 mm ² (AWG 16 ... AWG 6)

DC link (for braking resistor)

PE connection	On housing with M4 screw
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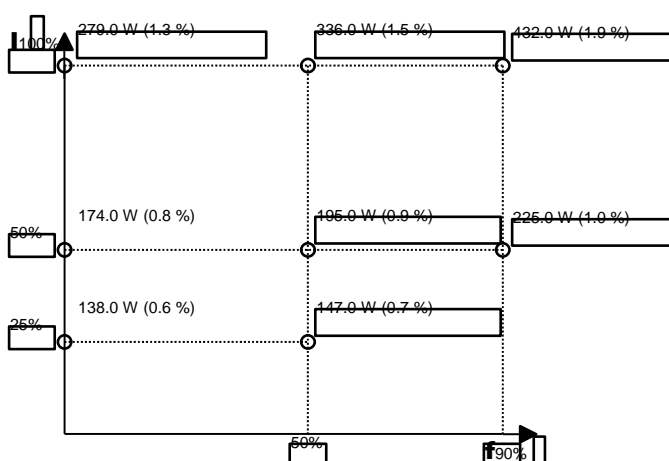
Max. motor cable length

Shielded	150 m (492.13 ft)
Unshielded	300 m (984.25 ft)

Converter losses to IEC61800-9-2*

Efficiency class	IE2
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Comparison with the reference converter (90% / 100%)	38.6 %
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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

Standards

Compliance with standards	UL, cUL, CE, C-Tick (RCM), EAC, KCC, SEMI F47, REACH
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CE marking	EMC Directive 2004/108/EC, Low-Voltage Directive 2006/95/EC
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¹⁾ The output current and HP ratings are valid for the voltage range 440V-480V

²⁾ 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: Intelligent Operator Panel (IOP-2)

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

Operation	0 ... 50 °C (32 ... 122 °F)
	55 °C only with door mounting kit
Storage	-40 ... 70 °C (-40 ... 158 °F)
Transport	-40 ... 70 °C (-40 ... 158 °F)

Relative humidity at 25°C during

Max. operation	95 %
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Approvals

Certificate of suitability	CE, cULus, EAC, KCC, RCM
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