

Data sheet for SINAMICS G120X

Article No. : 6SL3230-2YH30-0UB0

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	500 ... 690 V +10 % -20 %	
Line frequency	47 ... 63 Hz	
Rated voltage	690V IEC	600V NEC
Rated current (LO)	22.00 A	22.00 A
Rated current (HO)	20.00 A	20.00 A

Output

Number of phases	3 AC	
Rated voltage	690V IEC	600V NEC
Rated power (LO)	18.50 kW	20.00 hp
Rated power (HO)	15.00 kW	15.00 hp
Rated current (LO)	23.00 A	23.00 A
Rated current (HO)	19.00 A	19.00 A
Rated current (IN)	24.00 A	
Max. output current	32.00 A	
Pulse frequency	2 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	0.98
Sound pressure level (1m)	70 dB
Power loss	0.520 kW
Filter class (integrated)	Unfiltered
EMC category (with accessories)	without

Ambient conditions

Standard board coating type	Class 3C3, according to IEC 60721-3-3: 2002
Cooling	Air cooling using an integrated fan
Cooling air requirement	0.055 m³/s (1.942 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
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Mechanical data

Degree of protection	IP20 / UL open type
Size	FSD
Net weight	16.6 kg (36.60 lb)
Width	200 mm (7.87 in)
Height	472 mm (18.58 in)
Depth	248 mm (9.76 in)

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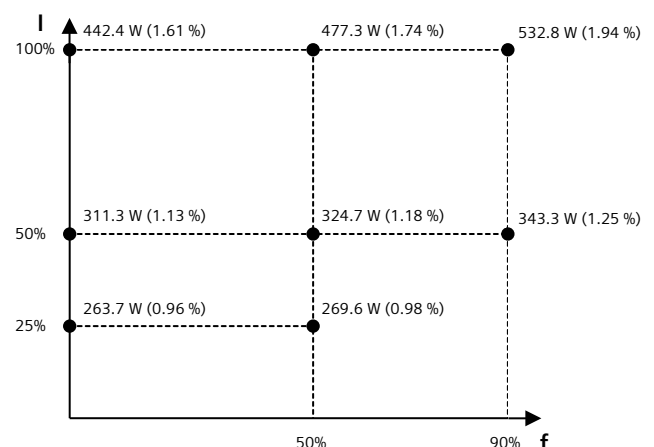
Inputs / outputs	
Standard digital inputs	
Number	6
Switching level: 0 → 1	11 V
Switching level: 1 → 0	5 V
Max. inrush current	15 mA
Fail-safe digital inputs	
Number	1
Digital outputs	
Number as relay changeover contact	2
Output (resistive load)	DC 30 V, 5.0 A
Number as transistor	0
Analog / digital 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, sensors that can be connected: PTC, KTY and Thermo-Click, accuracy ±5 °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	Yes
Torque control, with encoder	No

Communication	
Communication	USS, Modbus RTU, BACnet MS/TP

Connections	
Signal cable	
Conductor cross-section	0.15 ... 1.50 mm ² (AWG 24 ... AWG 16)
Line side	
Version	screw-type terminal
Conductor cross-section	10.00 ... 35.00 mm ² (AWG 8 ... AWG 2)
Motor end	
Version	Screw-type terminals
Conductor cross-section	10.00 ... 35.00 mm ² (AWG 8 ... AWG 2)
DC link (for braking resistor)	
PE connection	Screw-type terminals
Max. motor cable length	
Shielded	200 m (656.17 ft)
Unshielded	300 m (984.25 ft)

Converter losses to EN 50598-2*	
Efficiency class	IE2
Comparison with the reference converter (90% / 100%)	-39 %



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 EN 50598) 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
CE marking	EMC Directive 2004/108/EC, Low-Voltage Directive 2006/95/EC



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Operator panel: Basic Operator Panel (BOP-2)	
Screen	
Display design	LCD, monochrome
Mechanical data	
Degree of protection	IP55 / UL type 12
Net weight	0.14 kg (0.31 lb)
Width	70.00 mm (2.76 in)
Height	106.85 mm (4.21 in)
Depth	19.6 mm (0.77 in)
Ambient conditions	
Ambient temperature	
Operation	0 ... 50 °C (32 ... 122 °F)
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