SIEMENS Data sheet for SINAMICS G120X

Article No. :

6SL3220-2YE42-0UF0

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

Item no. :

Rated data

nput		
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)	140.00 A	120.00 A
Rated current (HO)	117.00 A	102.00 A
Dutput		
Number of phases	3 AC	
Rated voltage	400V IEC	480V NEC ₁₎
Rated power (LO)	75.00 kW	100.00 hp
Rated power (HO)	55.00 kW	75.00 hp
Rated current (LO)	145.00 A	124.00 A
Rated current (HO)	110.00 A	96.00 A
Rated current (IN)	149.00 A	
Max. output current	196.00 A	
Pulse frequency	4 kHz	
Dutput frequency for vector control	0 200 Hz	
Dutput frequency for V/f control	0 550 Hz	

Consignment no. : Project :

Amb	vient conditions
Standard board coating type	Class 3C2, according to IEC 60721-3-3: 2002
Cooling	Air cooling using an integrated fan
Cooling air requirement	0.153 m³/s (5.403 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
Me	chanical data
Degree of protection	IP20 / UL open type
Size	FSF
Net weight	61 kg (134.48 lb)
Dimensions	
Width	305 mm (12.01 in)
Height	709 mm (27.91 in)
Depth	369 mm (14.53 in)

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)	72 dB
Power loss ₃₎	2.000 kW
Filter class (integrated)	Unfiltered
EMC category (with accessories)	without



Figure similar

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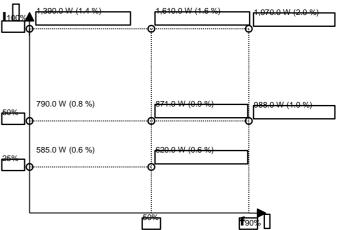
Number 6 Switching level: $0 \rightarrow 1$ $11 \vee$ Switching level: $1 \rightarrow 0$ $5 \vee$ Max. inrush current 15 mA ail-safe digital inputs	-	s / outputs
6 Switching level: $0 \rightarrow 1$ 11 V Switching level: $1 \rightarrow 0$ 5 V Max. inrush current 15 mA Fail-safe digital inputs Number Digital outputs Number as relay changeover contact 2Output (resistive load) DC 30 V, 5.0 A Number as transistor Danalog / digital inputs Number as transistor Danalog / digital inputs Number 10 bit Switching threshold as digital input $0 \rightarrow 1$ 4 V $1 \rightarrow 0$ 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 $\pm 5 ^{\circ}$ C Closed-loop control techniques //f timear / square-law / parameterizable Yes Sensorless vector control Yes Sensorless vector control Yes Sensorless torque control Yes Sensorless torque control Yes	Standard digital inputs	
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Number Digital outputs Number as relay changeover contact $2Output (resistive load)$ DC 30 V, 5.0 A Number as transistor 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 //f tinear / square-law / parameterizable Yes //f ECO linear / square-law Yes //f ECO linear / square-law Yes //f ECO linear / square-law Yes //f ector control, with sensor No Sensorless vector control Yes //ector control, with sensor No Encoderless torque control Yes	Max. inrush current	15 mA
Digital outputs Number as relay changeover contact 2Output (resistive load) DC 30 V, 5.0 A Number as transistor Danalog / 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 //f linear / square-law / parameterizable Yes //f ECO linear / square-law Yes Sensorless vector control Yes //ector control, with sensor No Encoderless torque control Yes	ail-safe digital inputs	
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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 //f linear / square-law / parameterizable Yes //f with flux current control (FCC) Yes //f ECO linear / square-law Yes Sensorless vector control Yes //ector control, with sensor No Encoderless torque control Yes	1 → 0	1.6 V
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 //f linear / square-law / parameterizable Yes //f with flux current control (FCC) Yes //f ECO linear / square-law Yes Sensorless vector control Yes /ector control, with sensor No Encoderless torque control Yes	Analog outputs	
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//f linear / square-law / parameterizable Yes //f with flux current control (FCC) Yes //f ECO linear / square-law Yes Sensorless vector control Yes //ector control, with sensor No Encoderless torque control Yes		ensors that can be connected: PTC, KTY
//f with flux current control (FCC) Yes //f ECO linear / square-law Yes Sensorless vector control Yes /ector control, with sensor No Encoderless torque control Yes		
//f ECO linear / square-law Yes Sensorless vector control Yes /ector control, with sensor No Encoderless torque control Yes	Closed-loop	control techniques
Sensorless vector control Yes /ector control, with sensor No Encoderless torque control Yes	-	-
/ector control, with sensor No Encoderless torque control Yes	//f linear / square-law / parameterizabl	e Yes
Encoderless torque control Yes	//f linear / square-law / parameterizabl	e Yes Yes
	-	re Yes Yes Yes
Forque control, with encoder No	//f linear / square-law / parameterizabl //f with flux current control (FCC) //f ECO linear / square-law	re Yes Yes Yes Yes
	//f linear / square-law / parameterizabl //f with flux current control (FCC) //f ECO linear / square-law Sensorless vector control	le Yes Yes Yes Yes No

Communication

PROFINET, EtherNet/IF

Connections	
Signal cable	
Conductor cross-section	0.15 1.50 mm ²
	(AWG 24 AWG 16)
ine side.	
Version	M10 screw
Conductor cross-section	35.00 2 x 120.00 mm ²
	(AWG 1 AWG 2 x 4/0)
Motor end	
Version	M10 screw
	35.00 2 x 120.00 mm ²
Conductor cross-section	(AWG 1 AWG 2 x 4/0)
DC link (for braking resistor)	
PE connection	M10 screw
Max. motor cable length	
Shielded	300 m (984.25 ft)
Unshielded	450 m (1,476.38 ft)
Converte	r losses to IEC61800-9-2*
Efficiency class	IF2

Comparison with the reference 42.1 %



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

Page 2 of 3

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.

SIEMENS Data sheet for SINAMICS G120X

Article No. :

6SL3220-2YE42-0UF0

	Screen		Ambient conditions	
Display design	LCD, monochrome	Ambient temperature		
		Operation	0 50 °C (32 122 °F)	
	Mechanical data	Storage	-40 70 °C (-40 158 °F)	
Degree of protection	IP55 / UL type 12	Transport	-40 70 °C (-40 158 °F)	
let weight	0.140 kg (0.31 lb)		, , , , , , , , , , , , , , , , , , ,	
limensions		Relative humidity at 25°C o	luring	
		Max. operation	95 %	
Width	70.00 mm (2.76 in)			
Height	106.85 mm (4.21 in)		Approvals	
Depth	19.60 mm (0.77 in)	Certificate of suitability	CE, cULus, EAC, KCC, RCM	