

## Data sheet for SINAMICS G120X

Article No. : 6SL3230-3YH30-0UF0



Figure similar

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

Item no. :  
Consignment no. :  
Project :

### 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 $\lambda$	0.90 ... 0.95
Offset factor $\cos \phi$	0.99
Efficiency $\eta$	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 m<sup>3</sup>/s (1.942 ft<sup>3</sup>/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

### 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
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#### 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)
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#### PTC/ KTY interface

1 motor temperature sensor input, sensors that can be connected: PTC, KTY and Thermo-Click, accuracy $\pm 5$ °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 <sup>2</sup> (AWG 24 ... AWG 16)
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#### Line side

Version	screw-type terminal
Conductor cross-section	10.00 ... 35.00 mm <sup>2</sup> (AWG 8 ... AWG 2)

#### Motor end

Version	Screw-type terminals
Conductor cross-section	10.00 ... 35.00 mm <sup>2</sup> (AWG 8 ... AWG 2)

#### DC link (for braking resistor)

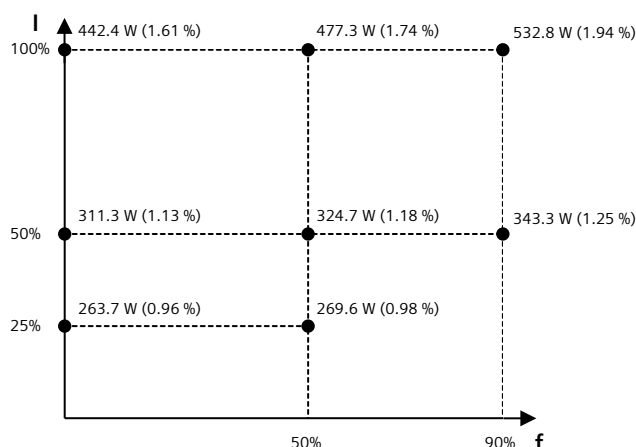
PE connection	Screw-type terminals
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#### Max. motor cable length

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: Intelligent Operator Panel (IOP-2)

#### Screen

Display design	LCD colors
Screen resolution	320 x 240 Pixel

#### Mechanical data

Degree of protection	IP55 / UL type 12
Net weight	0.13 kg (0.30 lb)
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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