

Data sheet for SINAMICS G120X

Article No. : 6SL3230-1YH20-0UP0



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) | 6.00 A | 6.00 A |
| Rated current (HO) | 5.20 A | 5.20 A |

Output

Number of phases 3 AC

Rated voltage **690V IEC** **600V NEC**

| | | |
|---------------------|---------|---------|
| Rated power (LO) | 4.00 kW | 5.00 hp |
| Rated power (HO) | 3.00 kW | 4.00 hp |
| Rated current (LO) | 6.30 A | 6.30 A |
| Rated current (HO) | 5.00 A | 5.00 A |
| Rated current (IN) | 7.00 A | |
| Max. output current | 9.00 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 | 0.350 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

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 $\pm 5^\circ\text{C}$

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 | PROFIBUS DP |
|---------------|-------------|

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)

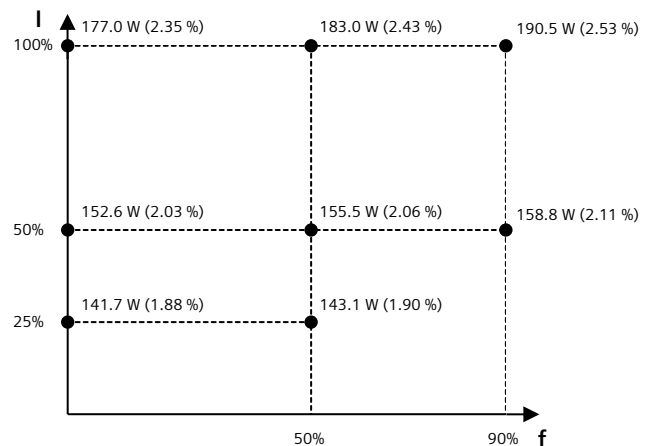
| | |
|---------------|----------------------|
| PE connection | Screw-type terminals |
|---------------|----------------------|

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%) | -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 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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