

### **Data sheet for SINAMICS G120X**

Article No.: 6SL3230-3YC30-0UF0

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

| Rated data          |                                  |                 |             |
|---------------------|----------------------------------|-----------------|-------------|
| Input               |                                  |                 |             |
| ١                   | lumber of phases                 | 3 AC            |             |
| L                   | ine voltage                      | 200 240 V +10 % | -20 %       |
| L                   | ine frequency                    | 47 63 Hz        |             |
| F                   | lated voltage                    | 200V IEC        | 240V NEC    |
|                     | Rated current (LO)               | 64.00 A         | 64.00 A     |
|                     | Rated current (HO)               | 51.00 A         | 51.00 A     |
| Output              |                                  |                 |             |
| ١                   | lumber of phases                 | 3 AC            |             |
| F                   | ated voltage                     | 200V IEC        | 240V NEC 1) |
|                     | Rated power (LO)                 | 18.50 kW        | 25.00 hp    |
|                     | Rated power (HO)                 | 15.00 kW        | 20.00 hp    |
|                     | Rated current (LO)               | 68.00 A         | 68.00 A     |
|                     | Rated current (HO)               | 54.00 A         | 54.00 A     |
|                     | Rated current (IN)               | 70.00 A         |             |
|                     | Max. output current              | 92.00 A         |             |
| Pulse frequency     |                                  | 4 kHz           |             |
| Ou                  | put frequency for vector control | 0 200 Hz        |             |
| Ou                  | tput frequency for V/f control   | 0 550 Hz        |             |
| Overload capability |                                  |                 |             |
| Lavy Overland (LO)  |                                  |                 |             |

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 η                      | 0.96  |  |
| Sound pressure level (1m)         | 70 dB   |  |
| Power loss 3)                     | 0.843 kW                                      |  |
| Filter class (integrated)         | Unfiltered                                    |  |
| EMC category (with accessories)   | without                                       |  |
| Safety function "Safe Torque Off" | without SIRIUS device (e.g. via S7-<br>1500F) |  |
|                                   |   |  |

| C   | nmui | -:   | 4:   |
|-----|------|------|------|
| Con | ımuı | nica | tion |

Communication PROFINET, EtherNet/IP



Item no. : Consignment no. : Project :

| Inputs /                             | outputs                |  |
|--------------------------------------|------------------------|--|
| Standard digital inputs              |                        |  |
| Number                               | 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                               | 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                       |                        |  |

#### PTC/ KTY interface

Number

1 motor temperature sensor input, sensors that can be connected PTC, KTY and Thermo-Click, accuracy  $\pm 5\,^{\circ}\text{C}$ 

1 (Non-isolated output)

| 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                | No  |  |
| Torque control, with encoder              | No  |  |



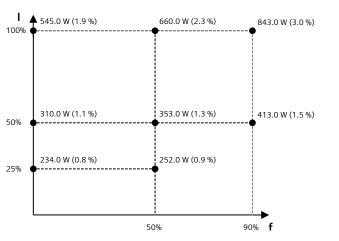
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| Ambient conditions             |  |  |  |
|--------------------------------|--|--|--|
| Standard board coating type    | Class 3C3, according to IEC 60721-3-3: 2002                    |  |  |
| Cooling                        | Air cooling using an 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 |  |  |
| Conn                           | ections  |  |  |
| Signal cable                   |  |  |  |
| Conductor cross-section        | 0.15 1.50 mm <sup>2</sup><br>(AWG 24 AWG 16)                   |  |  |
| Line side                      |  |  |  |
| Version                        | screw-type terminal  |  |  |
| Conductor cross-section        | 10.00 35.00 mm <sup>2</sup><br>(AWG 8 AWG 2)                   |  |  |
| Motor end                      |  |  |  |
| Version                        | Screw-type terminals   |  |  |
| Conductor cross-section        | 10.00 35.00 mm <sup>2</sup><br>(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)  |  |  |

| Mechanical data           |   |  |  |
|---------------------------|---|--|--|
| Degree of protection      | IP20 / UL open type   |  |  |
| Frame size                | FSD   |  |  |
| Net weight                | 16.6 kg (36.60 lb)  |  |  |
| Dimensions                |   |  |  |
| Width                     | 200 mm (7.87 in)  |  |  |
| Height                    | 472 mm (18.58 in)   |  |  |
| Depth                     | 248 mm (9.76 in)  |  |  |
|                           |   |  |  |
| Standards                 |   |  |  |
| Compliance with standards | UL, cUL, CE, C-Tick (RCM), EAC, KCC,<br>SEMI F47, REACH         |  |  |
| CE marking                | EMC Directive 2004/108/EC, Low-<br>Voltage Directive 2006/95/EC |  |  |
|                           |   |  |  |

| Converter losses to IEC61800-9-2*                    |        |  |
|--|--------|--|
| Efficiency class                                     | IE2    |  |
| Comparison with the reference converter (90% / 100%) | 60.0 % |  |



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

 $<sup>^{1)}</sup>$  The output current and HP ratings are valid for the voltage range 220V-240V

<sup>3)</sup> 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: I   | ntelligent Operator Panel (IOP-2) |  |
|----------------------|---------------------|-----------------------------------|--|
|                      | Screen              |                                   |  |
| Display design       | LCD color           | Ambient temperature               |  |
| Screen resolution    | 320 x 240 Pixel     | Operation                         |  |
|                      | Mechanical data     |                                   |  |
| Degree of protection | IP55 / UL type 12   | Storage  Transport                |  |
| Net weight           | 0.134 kg (0.30 lb)  | Relative humidity at 25°C         |  |
| Dimensions           |                     | Max. operation                    |  |
| Width                | 70.00 mm (2.76 in)  |                                   |  |
| Height               | 106.85 mm (4.21 in) |                                   |  |
| Depth                | 19.65 mm (0.77 in)  | Certificate of suitability        |  |

| Ambient conditions               |                                       |  |  |
|----------------------------------|---------------------------------------|--|--|
| Ambient temperature              |                                       |  |  |
| Operation                        | 0 50 °C (32 122 °F)                   |  |  |
|                                  | 55 °C only with door installation kit |  |  |
| 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              |  |  |

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