

Article No. : 6SL3220-3YE50-0AB0

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       | 380 ... 480 V +10 % -20 % |          |
| Line frequency     | 47 ... 63 Hz              |          |
| Rated voltage      | 400V IEC                  | 480V NEC |
| Rated current (LO) | 301.00 A                  | 301.00 A |
| Rated current (HO) | 275.00 A                  | 263.00 A |

|                                     |              |                        |
|-------------------------------------|--------------|------------------------|
| Output                              |              |                        |
| Number of phases                    | 3 AC         |                        |
| Rated voltage                       | 400V IEC     | 480V NEC <sup>1)</sup> |
| Rated power (LO)                    | 160.00 kW    | 250.00 hp              |
| Rated power (HO)                    | 132.00 kW    | 200.00 hp              |
| Rated current (LO)                  | 302.00 A     | 302.00 A               |
| Rated current (HO)                  | 250.00 A     | 240.00 A               |
| Rated current (IN)                  | 309.00 A     |                        |
| Max. output current                 | 408.00 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 φ               | 0.99                                      |
| Efficiency η                      | 0.98                                      |
| Sound pressure level (1m)         | 74 dB                                     |
| Power loss <sup>3)</sup>          | 3.660 kW                                  |
| Filter class (integrated)         | RFI suppression filter for Category C2    |
| EMC category (with accessories)   | Category C2                               |
| Safety function "Safe Torque Off" | without SIRIUS device (e.g. via S7-1500F) |

|               |                               |
|---------------|-------------------------------|
| Communication |                               |
| Communication | USS, Modbus RTU, BACnet MS/TP |

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

## Data sheet for SINAMICS G120X

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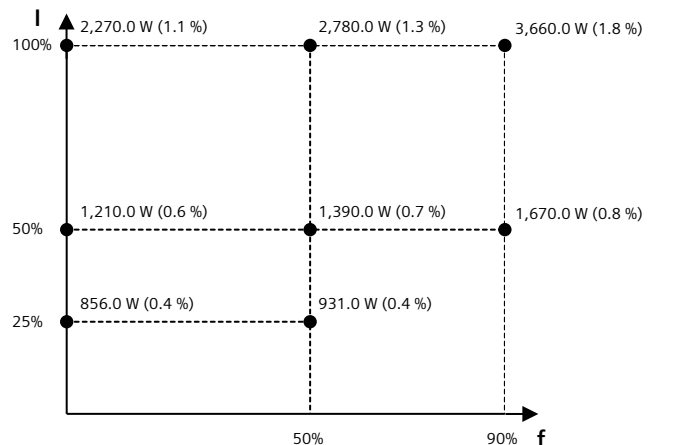
| Ambient conditions          |  |
|-----------------------------|--|
| Standard board coating type | Class 3C2, according to IEC 60721-3-3: 2002                    |
| Cooling                     | Air cooling using an integrated fan                            |
| Cooling air requirement     | 0.210 m³/s (7.416 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 |

| Connections                    |  |
|--------------------------------|--|
| Signal cable                   |  |
| Conductor cross-section        | 0.15 ... 1.50 mm² (AWG 24 ... AWG 16)            |
| Line side                      |  |
| Version                        | M10 screw  |
| Conductor cross-section        | 35.00 ... 2 x 185.00 mm² (AWG 1 ... MCM 2 x 350) |
| Motor end                      |  |
| Version                        | M10 screw  |
| Conductor cross-section        | 35.00 ... 2 x 185.00 mm² (AWG 1 ... MCM 2 x 350) |
| DC link (for braking resistor) |  |
| PE connection                  | M10 screw  |
| Max. motor cable length        |  |
| Shielded                       | 150 m (492.13 ft)                                |

| Mechanical data      |                     |
|----------------------|---------------------|
| Degree of protection | IP20 / UL open type |
| Frame size           | FSG                 |
| Net weight           | 105 kg (231.49 lb)  |
| Dimensions           |                     |
| Width                | 305 mm (12.01 in)   |
| Height               | 999 mm (39.33 in)   |
| Depth                | 369 mm (14.53 in)   |

| 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 |

| Converter losses to IEC61800-9-2*                    |        |
|--|--------|
| Efficiency class                                     | IE2    |
| Comparison with the reference converter (90% / 100%) | 43.0 % |



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 440V-480V  
<sup>3)</sup>Typical value. More information can be found in the element group "Converter losses to IEC 61800-9-2" in this datasheet.

## Data sheet for SINAMICS G120X

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| Operator panel: Intelligent Operator Panel (IOP-2) |  |
|--|--|
| Screen   |  |
| Display design                                     | LCD color  |
| Screen resolution                                  | 320 x 240 Pixel  |
| Mechanical data                                    |  |
| Degree of protection                               | IP55 / UL type 12  |
| Net weight   | 0.134 kg (0.30 lb)   |
| Dimensions   |  |
| 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)<br>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   |