

Article No. : 6SL3220-3YH56-0CB0

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         | 500 ... 690 V +10 % -10 % |                 |
| Line frequency       | 47 ... 63 Hz              |                 |
| <b>Rated voltage</b> | <b>690V IEC</b>           | <b>600V NEC</b> |
| Rated current (LO)   | 343.00 A                  | 375.00 A        |
| Rated current (HO)   | 283.00 A                  | 307.00 A        |

#### Output

|                                     |                 |                               |
|-------------------------------------|-----------------|-------------------------------|
| Number of phases                    | 3 AC            |                               |
| <b>Rated voltage</b>                | <b>690V IEC</b> | <b>600V NEC <sup>1)</sup></b> |
| Rated power (LO)                    | 315.00 kW       | 350.00 hp                     |
| Rated power (HO)                    | 250.00 kW       | 250.00 hp                     |
| Rated current (LO)                  | 330.00 A        | 345.00 A                      |
| Rated current (HO)                  | 272.00 A        | 295.00 A                      |
| Rated current (IN)                  | 368.00 A        |                               |
| Max. output current                 | 487.00 A        |                               |
| Pulse frequency                     | 2 kHz           |                               |
| Output frequency for vector control | 0 ... 100 Hz    |                               |
| Output frequency for V/f control    | 0 ... 100 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 300 s cycle time |

### General tech. specifications

|                                   |                                           |
|-----------------------------------|-------------------------------------------|
| Power factor $\lambda$            | 0.75 ... 0.93                             |
| Offset factor $\cos \phi$         | 0.96                                      |
| Efficiency $\eta$                 | 0.98                                      |
| Sound pressure level (1m)         | 74 dB                                     |
| Power loss <sup>3)</sup>          | 5.880 kW                                  |
| Filter class (integrated)         | RFI suppression filter for Category C3    |
| EMC category (with accessories)   | Category C3                               |
| 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 $\pm 5$ °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

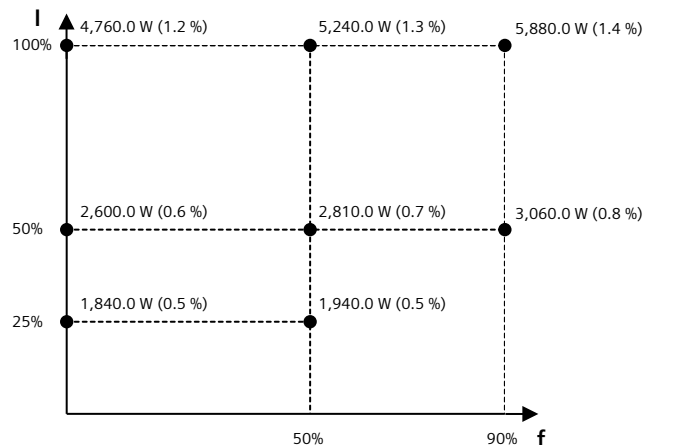
Article No. : 6SL3220-3YH56-0CB0

| 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     | 0.362 m³/s (12.784 ft³/s)                                      |
| Installation altitude       | 1,000 m (3,280.84 ft)                                          |
| Ambient temperature         |                                                                |
| Operation                   | 0 ... 45 °C (32 ... 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                        | M12 screw                                    |
| Conductor cross-section        | 4 x 240.00 mm² (MCM 2 x 500 ... MCM 4 x 500) |
| Motor end                      |                                              |
| Version                        | M12 screw                                    |
| Conductor cross-section        | 4 x 240.00 mm² (MCM 2 x 500 ... MCM 4 x 500) |
| DC link (for braking resistor) |                                              |
| PE connection                  | M12 screw                                    |
| Max. motor cable length        |                                              |
| Shielded                       | 150 m (492.13 ft)                            |

| Mechanical data           |                                                             |
|---------------------------|-------------------------------------------------------------|
| Degree of protection      | IP20 / UL open type                                         |
| Frame size                | FSH                                                         |
| Net weight                | 158 kg (348.33 lb)                                          |
| Dimensions                |                                                             |
| Width                     | 548 mm (21.57 in)                                           |
| Height                    | 1,695 mm (66.73 in)                                         |
| Depth                     | 393 mm (15.47 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%) | 35.4 % |



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 550V-600V  
<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

Article No. : 6SL3220-3YH56-0CB0

| Operator panel: Intelligent Operator Panel (IOP-2) |                                  |
|----------------------------------------------------|----------------------------------|
| Screen                                             | Ambient conditions               |
| Display design                                     | LCD color                        |
| Screen resolution                                  | 320 x 240 Pixel                  |
| Mechanical data                                    | Ambient temperature              |
| Degree of protection                               | IP55 / UL type 12                |
| Net weight                                         | 0.134 kg (0.30 lb)               |
| Dimensions                                         | Relative humidity at 25°C during |
| Width                                              | Max. operation                   |
| Height                                             | 95 %                             |
| Depth                                              | Approvals                        |
|                                                    | Certificate of suitability       |
|                                                    | CE, cULus, EAC, KCC, RCM         |