SIEMENS

# Data sheet for SINAMICS G120C



## Ordering data

**6SL3210-1KE22-6AF1**

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

Item no. :
Consignment no. :
Project :

## Rated data

### Input

| | |
|---|---|
| **Number of phases** | 3 AC |
| **Line voltage** | 380 ... 480 V +10 % -20 % |
| **Line frequency** | 47 ... 63 Hz |
| **Rated current (LO)** | 33.00 A |
| **Rated current (HO)** | 24.10 A |

### Output

| | |
|---|---|
| **Number of phases** | 3 AC |
| **Rated voltage** | 400 V |
| **Rated power (LO)** | 11.00 kW |
| **Rated power (HO)** | 7.50 kW |
| **Rated current (IN)** | 24.10 A |
| **Rated current (LO)** | 25.00 A |
| **Rated current (HO)** | 16.50 A |
| **Max. output current** | 33.00 A |
| **Pulse frequency** | 4 kHz |
| **Output frequency for vector control** | 0 ... 240 Hz |
| **Output frequency for V/f control** | 0 ... 650 Hz |

In firmware V4.7 and higher, due to legal requirements, the maximum output frequency is restricted to 550 Hz.

### Overload capability

**Low Overload (LO)**

150 % base load current IL for 3 s, followed by 110 % base load current IL for 57 s in a 300 s cycle time

**High Overload (HO)**

200 % base load current IH for 3 s, followed by 150 % base load current IH for 57 s in a 300 s cycle time

## General tech. specifications

| | |
|---|---|
| **Power factor λ** | 0.70 ... 0.85 |
| **Offset factor cos φ** | 0.95 |
| **Efficiency η** | 0.97 |
| **Sound pressure level (1m)** | 66 dB |
| **Power loss** | 0.35 kW |

## Ambient conditions

| | |
|---|---|
| **Cooling** | Air cooling using an integrated fan |
| **Cooling air requirement** | 0.018 m³/s |
| **Installation altitude** | 1000 m |

### Ambient temperature

| | |
|---|---|
| **Operation** | -10 ... 40 °C (14 ... 104 °F) |
| **Transport** | -40 ... 70 °C (-40 ... 158 °F) |
| **Storage** | -40 ... 70 °C (-40 ... 158 °F) |

### Relative humidity

| | |
|---|---|
| **Max. operation** | 95 % At 40 °C (104 °F), condensation and icing not permissible |

## 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 |

## Communication

| | |
|---|---|
| **Communication** | PROFINET |

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## Mechanical data

| | |
|---|---|
| **Degree of protection** | IP20 / UL open type |
| **Size** | FSC |
| **Net weight** | 4.40 kg |
| **Width** | 140.0 mm |
| **Height** | 295.0 mm |
| **Depth** | 225.0 mm |

## 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** | 1 |
| **Output (resistive load)** | DC 30 V, 1 A |
| **Number as transistor** | 1 |
| **Output (resistive load)** | DC 30 V, 1 A |

### Analog/ digital inputs

| | |
|---|---|
| **Number** | 1 (Differential input) |

### 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

## Standards

| | |
|---|---|
| **Compliance with standards** | CE, cULus, c-tick |
| **CE marking** | EMC Directive 2004/108/EC, Low-Voltage Directive 2006/95/EC |

## Connections

### Signal cable

| | |
|---|---|
| **Conductor cross-section** | 0.15 ... 1.50 mm² (28 ... 16 AWG) |

### Line side

| | |
|---|---|
| **Version** | Plug-in screw-type terminals |
| **Conductor cross-section** | 6.00 ... 16.00 mm² (10 ... 5 AWG) |

### Motor end

| | |
|---|---|
| **Version** | Plug-in screw terminals |
| **Conductor cross-section** | 6.00 ... 16.00 mm² (10 ... 5 AWG) |

### DC link (for braking resistor)

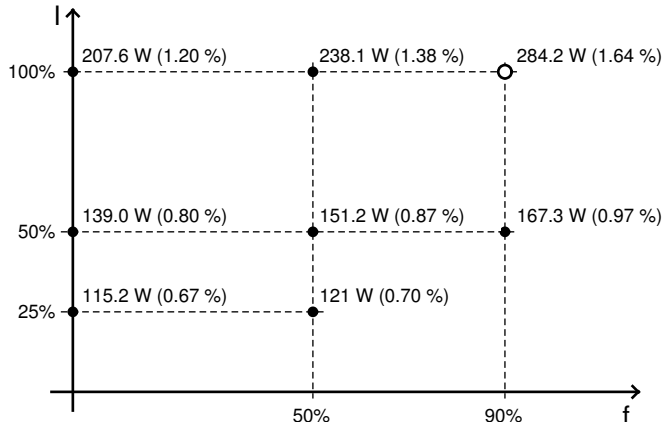
| | |
|---|---|
| **Version** | Plug-in screw terminals |
| **Conductor cross-section** | 6.00 ... 16.00 mm² (10 ... 5 AWG) |
| **PE connection** | On housing with M4 screw |

### Max. motor cable length

| | |
|---|---|
| **Shielded** | 50 m |
| **Unshielded** | 100 m |

## Converter losses to EN 50598-2*

| | |
|---|---|
| Efficiency class | IE2 |
| Comparison with the reference converter (90% / 100%) | -69.91 % |




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.

*calculated values; increased by 10% according to the standard