

# SIEMENS

## Data sheet for SINAMICS G120C



Figure similar

### MLFB-Ordering data

6SL3210-1KE31-4AF1

Client order no. :

Order no. :

Offer no. :

Remarks :

Item no. :

Consignment no. :

Project :

| Rated data                                                                                                | General tech. specifications                                                      |
|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Input</b>                                                                                              | <b>Power factor <math>\lambda</math></b> 0.90 ... 0.95                            |
| <b>Number of phases</b> 3 AC                                                                              | <b>Offset factor <math>\cos \varphi</math></b> 0.99                               |
| <b>Line voltage</b> 380 ... 480 V +10 % -20 %                                                             | <b>Efficiency <math>\eta</math></b> 0.99                                          |
| <b>Line frequency</b> 47 ... 63 Hz                                                                        | <b>Sound pressure level (1m)</b> 68 dB                                            |
| <b>Rated current (LO)</b> 134.00 A                                                                        | <b>Power loss</b> 1.23 kW                                                         |
| <b>Rated current (HO)</b> 112.00 A                                                                        |                                                                                   |
| <b>Output</b>                                                                                             | <b>Ambient conditions</b>                                                         |
| <b>Number of phases</b> 3 AC                                                                              | <b>Cooling</b> Air cooling using an integrated fan                                |
| <b>Rated voltage</b> 400 V                                                                                | <b>Cooling air requirement</b> 0.153 m <sup>3</sup> /s (5.403 ft <sup>3</sup> /s) |
| <b>Rated power IEC 400V (LO)</b> 75.00 kW                                                                 | <b>Installation altitude</b> 1000 m (3280.84 ft)                                  |
| <b>Rated power NEC 480V (LO)</b> 75.00 hp                                                                 | <b>Ambient temperature</b>                                                        |
| <b>Rated power IEC 400V (HO)</b> 55.00 kW                                                                 | <b>Operation</b> -20 ... 40 °C (-4 ... 104 °F)                                    |
| <b>Rated power NEC 480V (HO)</b> 60.00 hp                                                                 | <b>Transport</b> -40 ... 70 °C (-40 ... 158 °F)                                   |
| <b>Rated current (IN)</b> 136.00 A                                                                        | <b>Storage</b> -40 ... 70 °C (-40 ... 158 °F)                                     |
| <b>Rated current (LO)</b> 136.00 A                                                                        | <b>Relative humidity</b>                                                          |
| <b>Rated current (HO)</b> 103.00 A                                                                        | <b>Max. operation</b> 95 % RH, condensation not permitted                         |
| <b>Max. output current</b> 206.00 A                                                                       |                                                                                   |
| <b>Pulse frequency</b> 2.000 kHz                                                                          | <b>Closed-loop control techniques</b>                                             |
| <b>Output frequency for vector control</b> 0 ... 240 Hz                                                   | <b>V/f linear / square-law / parameterizable</b> Yes                              |
| <b>Output frequency for V/f control</b> 0 ... 550 Hz                                                      | <b>V/f with flux current control (FCC)</b> Yes                                    |
|                                                                                                           | <b>V/f ECO linear / square-law</b> Yes                                            |
|                                                                                                           | <b>Sensorless vector control</b> Yes                                              |
|                                                                                                           | <b>Vector control, with sensor</b> No                                             |
|                                                                                                           | <b>Encoderless torque control</b> No                                              |
|                                                                                                           | <b>Torque control, with encoder</b> No                                            |
| <b>Overload capability</b>                                                                                | <b>Communication</b>                                                              |
| <b>Low Overload (LO)</b>                                                                                  | <b>Communication</b> PROFINET / EtherNet/IP                                       |
| 150 % base load current IL for 3 s, followed by 110 % base load current IL for 57 s in a 300 s cycle time |                                                                                   |
| <b>High Overload (HO)</b>                                                                                 |                                                                                   |
| 200 % base load current IH for 3 s, followed by 150 % base load current IH for 57 s in a 300 s cycle time |                                                                                   |



Figure similar

| Mechanical data      |                      |
|----------------------|----------------------|
| Degree of protection | IP20 / UL open type  |
| Size                 | FSF                  |
| Net weight           | 63.50 kg (139.99 lb) |
| Width                | 305 mm (12.01 in)    |
| Height               | 708 mm (27.87 in)    |
| Depth                | 357 mm (14.06 in)    |
| 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, 0.5 A |
| Number as transistor               | 1              |
| Output (resistive load)            | DC 30 V, 0.5 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 |
|------------------------------------------------------------------------------------------------------------|

| Connections                    |                                         |
|--------------------------------|-----------------------------------------|
| Signal cable                   |                                         |
| Conductor cross-section        | 0.15 ... 1.50 mm² (AWG 24 ... AWG 16)   |
| Line side                      |                                         |
| Version                        | screw-type terminal                     |
| Conductor cross-section        | 35.00 ... 120.00 mm² (AWG 2 ... AWG -3) |
| Motor end                      |                                         |
| Version                        | Screw-type terminals                    |
| Conductor cross-section        | 35.00 ... 120.00 mm² (AWG 2 ... AWG -3) |
| DC link (for braking resistor) |                                         |
| Version                        | Screw-type terminals                    |
| Conductor cross-section        | 35.00 ... 120.00 mm² (AWG 2 ... AWG -3) |
| Line length, max.              | 10 m (32.81 ft)                         |
| PE connection                  | Screw-type terminals                    |
| Max. motor cable length        |                                         |
| Shielded                       | 300 m (984.25 ft)                       |
| Unshielded                     | 450 m (1476.38 ft)                      |

| Standards                 |                                                             |
|---------------------------|-------------------------------------------------------------|
| Compliance with standards | UL, cUL, CE, C-Tick (RCM)                                   |
| CE marking                | EMC Directive 2004/108/EC, Low-Voltage Directive 2006/95/EC |



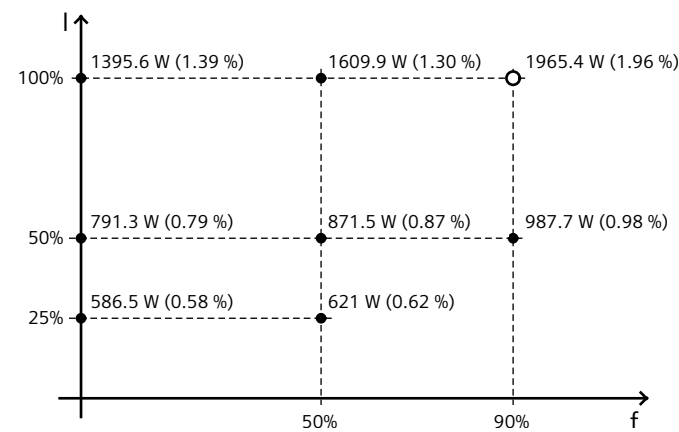
Figure similar

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Converter losses to EN 50598-2\*

|                                                      |         |
|------------------------------------------------------|---------|
| Efficiency class                                     | IE2     |
| Comparison with the reference converter (90% / 100%) | -0.42 % |



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