

Article No. : 6SL3220-2YD20-0UB0

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 ... 440 V +10 % -20 % |
| Line frequency     | 47 ... 63 Hz              |
| Rated current (LO) | 8.50 A                    |

|                                     |              |
|-------------------------------------|--------------|
| Output                              |              |
| Number of phases                    | 3 AC         |
| Rated voltage                       | 400 V        |
| Rated power IEC 400V (LO)           | 4.00 kW      |
| Rated current 400V (IN)             | 8.80 A       |
| Rated current 380V (IN)             | 9.30 A       |
| Rated current (LO)                  | 8.80 A       |
| Max. output current                 | 9.70 A       |
| Pulse frequency                     | 4 kHz        |
| Output frequency for vector control | 0 ... 240 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 600 s cycle time |  |
| Max. output current                                      |  |
| Max. output current for 60 s in a 600 s cycle time       |  |

General tech. specifications

|                                   |                                           |
|-----------------------------------|-------------------------------------------|
| Power factor λ                    | 0.75 ... 0.93                             |
| Power factor cos φ 1              | 0.99                                      |
| Efficiency η                      | 0.97                                      |
| Sound pressure level (1m)         | 63 dB                                     |
| Power loss <sup>3)</sup>          | 0.121 kW                                  |
| Filter class (integrated)         | Unfiltered                                |
| EMC category (with accessories)   | without                                   |
| 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                   | 0 |

|                                    |                |
|------------------------------------|----------------|
| Digital outputs                    |                |
| Number as relay changeover contact | 4              |
| Output (resistive load)            | DC 30 V, 1.0 A |
| Number as transistor               | 0              |

|                         |                        |
|-------------------------|------------------------|
| Analog / digital inputs |                        |
| Number                  | 2 (Differential input) |
| Resolution              | 12 bit                 |

|                                      |       |
|--------------------------------------|-------|
| Switching threshold as digital input |       |
| 0 → 1                                | 4 V   |
| 1 → 0                                | 1.6 V |

|                |                         |
|----------------|-------------------------|
| Analog outputs |                         |
| Number         | 2 (Non-isolated output) |

|                                                                                                                    |  |
|--------------------------------------------------------------------------------------------------------------------|--|
| PTC/ KTY interface                                                                                                 |  |
| 1 motor temperature sensor input, sensors that can be connected: PTC, KTY, PT1000 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                | Yes |
| Torque control, with encoder              | No  |

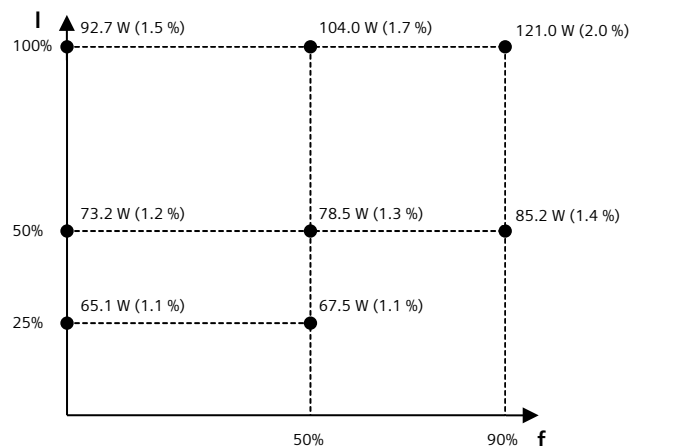
## Data sheet for SINAMICS G120XA

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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     | 0.005 m³/s (0.177 ft³/s)                                       |
| Installation altitude       | 1,000 m (3,280.84 ft)                                          |
| Ambient temperature         |                                                                |
| Operation                   | -20 ... 60 °C (-4 ... 140 °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 |

| Connections                    |                                       |
|--------------------------------|---------------------------------------|
| Signal cable                   |                                       |
| Conductor cross-section        | 0.15 ... 1.50 mm² (AWG 24 ... AWG 16) |
| Line side                      |                                       |
| Version                        | screw-type terminal                   |
| Conductor cross-section        | 1.50 ... 6.00 mm² (AWG 16 ... AWG 10) |
| Motor end                      |                                       |
| Version                        | Screw-type terminals                  |
| Conductor cross-section        | 1.50 ... 6.00 mm² (AWG 16 ... AWG 10) |
| DC link (for braking resistor) |                                       |
| PE connection                  | On housing with M4 screw              |
| Max. motor cable length        |                                       |
| Shielded                       | 150 m (492.13 ft)                     |
| Unshielded                     | 300 m (984.25 ft)                     |

| Mechanical data                                      |                                                             |
|------------------------------------------------------|-------------------------------------------------------------|
| Degree of protection                                 | IP20 / UL open type                                         |
| Frame size                                           | FSB                                                         |
| Net weight                                           | 5.6 kg (12.35 lb)                                           |
| Dimensions                                           |                                                             |
| Width                                                | 100 mm (3.94 in)                                            |
| Height                                               | 275 mm (10.83 in)                                           |
| Depth                                                | 209 mm (8.23 in)                                            |
| Standards                                            |                                                             |
| Compliance with standards                            | CE, EAC, RCM, RoHS II                                       |
| 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%) | 33.0 %                                                      |



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.

\*calculated values

<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 G120XA

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|                                              |                                |
|----------------------------------------------|--------------------------------|
| Operator panel: Basic Operator Panel (BOP-2) |                                |
| Screen                                       |                                |
| Display design                               | LCD, monochrome                |
| Mechanical data                              |                                |
| Degree of protection                         | IP55 / UL type 12              |
| Net weight                                   | 0.140 kg (0.31 lb)             |
| Dimensions                                   |                                |
| Width                                        | 70.00 mm (2.76 in)             |
| Height                                       | 106.85 mm (4.21 in)            |
| Depth                                        | 19.60 mm (0.77 in)             |
| Ambient conditions                           |                                |
| Ambient temperature                          |                                |
| Operation                                    | 0 ... 50 °C (32 ... 122 °F)    |
| 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       |