

## Data sheet for SINAMICS G120X

Article No. : 6SL3230-3YE48-0AP0



Figure similar

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 voltage** 400V IEC 480V NEC

|                    |          |          |
|--------------------|----------|----------|
| Rated current (LO) | 241.00 A | 232.00 A |
| Rated current (HO) | 218.00 A | 191.00 A |

#### Output

Number of phases 3 AC

**Rated voltage** 400V IEC 480V NEC

|                     |           |           |
|---------------------|-----------|-----------|
| Rated power (LO)    | 132.00 kW | 200.00 hp |
| Rated power (HO)    | 110.00 kW | 150.00 hp |
| Rated current (LO)  | 250.00 A  | 240.00 A  |
| Rated current (HO)  | 205.00 A  | 180.00 A  |
| Rated current (IN)  | 256.00 A  |           |
| Max. output current | 338.00 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 $\lambda$          | 0.90 ... 0.95                          |
| Offset factor $\cos \phi$       | 0.99                                   |
| Efficiency $\eta$               | 0.98                                   |
| Sound pressure level (1m)       | 72 dB                                  |
| Power loss                      | 2.350 kW                               |
| Filter class (integrated)       | RFI suppression filter for Category C2 |
| EMC category (with accessories) | Category C2                            |

### Ambient conditions

Standard board coating type Class 3C3, according to IEC 60721-3-3: 2002

Cooling Air cooling using an integrated fan

Cooling air requirement 0.153 m<sup>3</sup>/s (5.403 ft<sup>3</sup>/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

### Mechanical data

Degree of protection IP20 / UL open type

Size FSF

Net weight 71 kg (156.53 lb)

Width 305 mm (12.01 in)

Height 709 mm (27.91 in)

Depth 369 mm (14.53 in)

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### 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                | Yes |
| Torque control, with encoder              | No  |

### Communication

|               |             |
|---------------|-------------|
| Communication | PROFIBUS DP |
|---------------|-------------|

### Connections

#### Signal cable

|                         |  |
|-------------------------|--|
| Conductor cross-section | 0.15 ... 1.50 mm <sup>2</sup><br>(AWG 24 ... AWG 16) |
|-------------------------|--|

#### Line side

|                         |   |
|-------------------------|---|
| Version                 | M10 screw   |
| Conductor cross-section | 35.00 ... 120.00 mm <sup>2</sup><br>(AWG 1 ... AWG 4/0) |

#### Motor end

|                         |   |
|-------------------------|---|
| Version                 | M10 screw   |
| Conductor cross-section | 35.00 ... 120.00 mm <sup>2</sup><br>(AWG 1 ... AWG 4/0) |

#### DC link (for braking resistor)

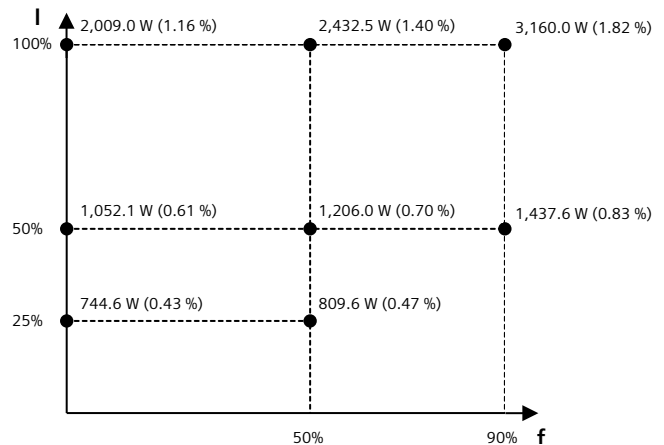
|               |           |
|---------------|-----------|
| PE connection | M10 screw |
|---------------|-----------|

#### Max. motor cable length

|          |                   |
|----------|-------------------|
| Shielded | 150 m (492.13 ft) |
|----------|-------------------|

### Converter losses to EN 50598-2\*

|  |         |
|--|---------|
| Efficiency class                                     | IE2     |
| Comparison with the reference converter (90% / 100%) | -44.6 % |



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

### 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 |

## Data sheet for SINAMICS G120X

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### Operator panel: Intelligent Operator Panel (IOP-2)

#### Screen

|                   |                 |
|-------------------|-----------------|
| Display design    | LCD colors      |
| Screen resolution | 320 x 240 Pixel |

#### Mechanical data

|                      |                     |
|----------------------|---------------------|
| Degree of protection | IP55 / UL type 12   |
| Net weight           | 0.13 kg (0.30 lb)   |
| 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)       |
|           | 55 °C only with door mounting 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 |
|----------------------------|--------------------------|