

Article No. : 6SL3210-1KE31-4AF1

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 ... 480 V +10 % -20 % |
| Line frequency     | 47 ... 63 Hz              |
| Rated current (LO) | 134.00 A                  |
| Rated current (HO) | 112.00 A                  |

|                                     |                                 |
|-------------------------------------|---------------------------------|
| Output                              |                                 |
| Number of phases                    | 3 AC                            |
| Rated voltage                       | 400V IEC 480V NEC <sup>1)</sup> |
| Rated power (LO)                    | 75.00 kW 75.00 hp               |
| Rated power (HO)                    | 55.00 kW 60.00 hp               |
| Rated current (LO)                  | 136.00 A                        |
| Rated current (HO)                  | 103.00 A                        |
| Rated current (IN)                  | 136.00 A                        |
| Max. output current                 | 206.00 A                        |
| Pulse frequency                     | 2 kHz                           |
| Output frequency for vector control | 0 ... 240 Hz                    |
| Output frequency for V/f control    | 0 ... 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            | 0.90 ... 0.95 |
| Offset factor cos φ       | 0.99          |
| Efficiency η              | 0.99          |
| Sound pressure level (1m) | 68 dB         |
| Power loss                | 1,540.0 W     |
| Filter class (integrated) | Class A       |

Communication

|               |                       |
|---------------|-----------------------|
| Communication | PROFINET, EtherNet/IP |
|---------------|-----------------------|

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) |
| 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 ±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  |

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| Ambient conditions      |                                     |
|-------------------------|-------------------------------------|
| Cooling                 | Air cooling using an integrated fan |
| Cooling air requirement | 0.153 m³/s (5.403 ft³/s)            |
| Installation altitude   | 1,000 m (3,280.84 ft)               |

| Ambient temperature |                                |
|---------------------|--------------------------------|
| Operation           | -20 ... 40 °C (-4 ... 104 °F)  |
| Transport           | -40 ... 70 °C (-40 ... 158 °F) |
| Storage             | -25 ... 55 °C (-13 ... 131 °F) |

| Relative humidity |                                     |
|-------------------|-------------------------------------|
| Max. operation    | 95 % RH, condensation not permitted |

| Connections |  |
|-------------|--|
|-------------|--|

| Signal cable            |                                          |
|-------------------------|------------------------------------------|
| Conductor cross-section | 0.15 ... 1.50 mm²<br>(AWG 24 ... AWG 16) |

| Line side               |                                            |
|-------------------------|--------------------------------------------|
| Version                 | screw-type terminal                        |
| Conductor cross-section | 35.00 ... 120.00 mm²<br>(AWG 2 ... AWG -3) |

| Motor end               |                                            |
|-------------------------|--------------------------------------------|
| Version                 | Screw-type terminals                       |
| Conductor cross-section | 35.00 ... 120.00 mm²<br>(AWG 2 ... AWG -3) |

| DC link (for braking resistor) |                                            |
|--------------------------------|--------------------------------------------|
| Version                        | Screw-type terminals                       |
| Conductor cross-section        | 35.00 ... 120.00 mm²<br>(AWG 2 ... AWG -3) |
| Line length, max.              | 10 m (32.81 ft)                            |
| PE connection                  | Screw-type terminals                       |

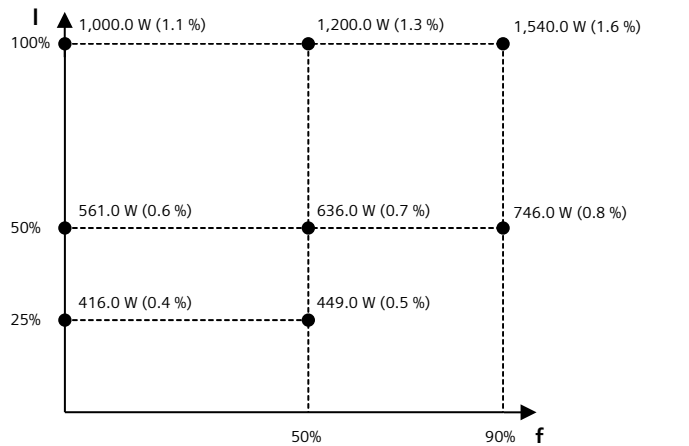
| Max. motor cable length |                     |
|-------------------------|---------------------|
| Shielded                | 300 m (984.25 ft)   |
| Unshielded              | 450 m (1,476.38 ft) |

| Mechanical data      |                      |
|----------------------|----------------------|
| Degree of protection | IP20 / UL open type  |
| Frame size           | FSF                  |
| Net weight           | 63.50 kg (139.99 lb) |

| Dimensions |                   |
|------------|-------------------|
| Width      | 305 mm (12.01 in) |
| Height     | 708 mm (27.87 in) |
| Depth      | 357 mm (14.06 in) |

| Standards                 |                                                             |
|---------------------------|-------------------------------------------------------------|
| Compliance with standards | CE, cUL, UL, KC, EAC, C-Tick (RCM)                          |
| 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%) | 35.0 % |



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>1)</sup>The output current and HP ratings are valid for the voltage range 440V-480V