



Figure similar

### MLFB-Ordering data

6SL3210-1KE13-2AB1

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>         | 0.70 ... 0.85                                                  |
| <b>Number of phases</b>                    | 3 AC                                                                                                      | <b>Offset factor <math>\cos \varphi</math></b>   | 0.95                                                           |
| <b>Line voltage</b>                        | 380 ... 480 V +10 % -20 %                                                                                 | <b>Efficiency <math>\eta</math></b>              | 0.97                                                           |
| <b>Line frequency</b>                      | 47 ... 63 Hz                                                                                              | <b>Sound pressure level (1m)</b>                 | 52 dB                                                          |
| <b>Rated current (LO)</b>                  | 4.10 A                                                                                                    | <b>Power loss</b>                                | 0.05 kW                                                        |
| <b>Rated current (HO)</b>                  | 3.20 A                                                                                                    | <b>Filter class (integrated)</b>                 | Class 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>                   | 0.005 m³/s (0.177 ft³/s)                                       |
| <b>Rated power IEC 400V (LO)</b>           | 1.10 kW                                                                                                   | <b>Installation altitude</b>                     | 1000 m (3280.84 ft)                                            |
| <b>Rated power NEC 480V (LO)</b>           | 1.50 hp                                                                                                   | <b>Ambient temperature</b>                       |                                                                |
| <b>Rated power IEC 400V (HO)</b>           | 0.75 kW                                                                                                   | <b>Operation</b>                                 | -10 ... 40 °C (14 ... 104 °F)                                  |
| <b>Rated power NEC 480V (HO)</b>           | 1.00 hp                                                                                                   | <b>Transport</b>                                 | -40 ... 70 °C (-40 ... 158 °F)                                 |
| <b>Rated current (LO)</b>                  | 3.10 A                                                                                                    | <b>Storage</b>                                   | -40 ... 70 °C (-40 ... 158 °F)                                 |
| <b>Rated current (HO)</b>                  | 2.20 A                                                                                                    | <b>Relative humidity</b>                         |                                                                |
| <b>Rated current (IN)</b>                  | 3.20 A                                                                                                    | <b>Max. operation</b>                            | 95 % At 40 °C (104 °F), condensation and icing not permissible |
| <b>Max. output current</b>                 | 4.40 A                                                                                                    | <b>Closed-loop control techniques</b>            |                                                                |
| <b>Pulse frequency</b>                     | 4 kHz                                                                                                     | <b>V/f linear / square-law / parameterizable</b> | Yes                                                            |
| <b>Output frequency for vector control</b> | 0 ... 240 Hz                                                                                              | <b>V/f with flux current control (FCC)</b>       | Yes                                                            |
| <b>Output frequency for V/f control</b>    | 0 ... 550 Hz                                                                                              | <b>V/f ECO linear / square-law</b>               | Yes                                                            |
| <b>Overload capability</b>                 |                                                                                                           | <b>Sensorless vector control</b>                 | Yes                                                            |
| <b>Low Overload (LO)</b>                   | 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 |                                                  |                                                                |
|                                            |                                                                                                           | <b>Vector control, with sensor</b>               | No                                                             |
|                                            |                                                                                                           | <b>Encoderless torque control</b>                | No                                                             |
|                                            |                                                                                                           | <b>Torque control, with encoder</b>              | No                                                             |



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| Mechanical data      |                     |
|----------------------|---------------------|
| Degree of protection | IP20 / UL open type |
| Size                 | FSA                 |
| Net weight           | 1.70 kg (3.75 lb)   |
| Width                | 73 mm (2.87 in)     |
| Height               | 196 mm (7.72 in)    |
| Depth                | 203 mm (7.99 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) |
| 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 |
|------------------------------------------------------------------------------------------------------------|

| Communication |  |
|---------------|--|
|---------------|--|

|               |                |
|---------------|----------------|
| Communication | USS/MODBUS RTU |
|---------------|----------------|

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

### Signal cable

|                         |                                       |
|-------------------------|---------------------------------------|
| Conductor cross-section | 0.15 ... 1.50 mm² (AWG 24 ... AWG 16) |
|-------------------------|---------------------------------------|

### Line side

|         |                         |
|---------|-------------------------|
| Version | Plug-in screw terminals |
|---------|-------------------------|

|                         |                                       |
|-------------------------|---------------------------------------|
| Conductor cross-section | 1.00 ... 2.50 mm² (AWG 18 ... AWG 14) |
|-------------------------|---------------------------------------|

### Motor end

|         |                         |
|---------|-------------------------|
| Version | Plug-in screw terminals |
|---------|-------------------------|

|                         |                                       |
|-------------------------|---------------------------------------|
| Conductor cross-section | 1.00 ... 2.50 mm² (AWG 18 ... AWG 14) |
|-------------------------|---------------------------------------|

### DC link (for braking resistor)

|         |                         |
|---------|-------------------------|
| Version | Plug-in screw terminals |
|---------|-------------------------|

|                         |                                       |
|-------------------------|---------------------------------------|
| Conductor cross-section | 1.00 ... 2.50 mm² (AWG 18 ... AWG 14) |
|-------------------------|---------------------------------------|

|                   |                 |
|-------------------|-----------------|
| Line length, max. | 15 m (49.21 ft) |
|-------------------|-----------------|

|               |                          |
|---------------|--------------------------|
| PE connection | On housing with M4 screw |
|---------------|--------------------------|

### Max. motor cable length

|          |                  |
|----------|------------------|
| Shielded | 50 m (164.04 ft) |
|----------|------------------|

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

| Standards |  |
|-----------|--|
|-----------|--|

|                           |                           |
|---------------------------|---------------------------|
| Compliance with standards | UL, cUL, CE, C-Tick (RCM) |
|---------------------------|---------------------------|

|            |                                                             |
|------------|-------------------------------------------------------------|
| CE marking | EMC Directive 2004/108/EC, Low-Voltage Directive 2006/95/EC |
|------------|-------------------------------------------------------------|



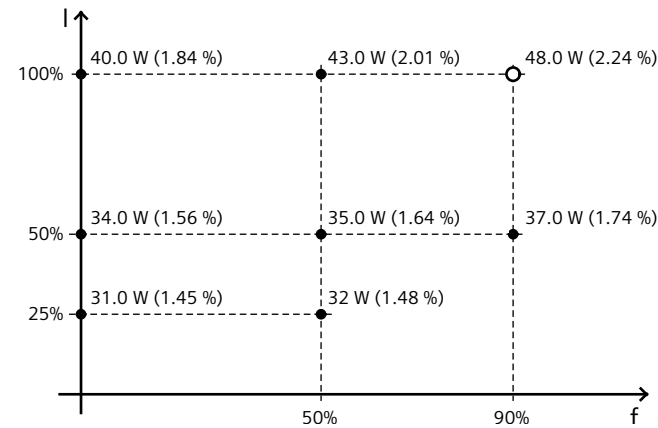
Figure similar

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Converter losses to EN 50598-2\*

|                                                      |          |
|------------------------------------------------------|----------|
| Efficiency class                                     | IE2      |
| Comparison with the reference converter (90% / 100%) | -76.45 % |



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