



Figure similar

**Article No. :** 6SL3220-2YE18-0AF0

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              |                 |
| <b>Rated voltage</b> | <b>400V IEC</b>           | <b>480V NEC</b> |
| Rated current (LO)   | 6.90 A                    | 5.80 A          |
| Rated current (HO)   | 5.50 A                    | 4.60 A          |

#### Output

|                      |                 |                             |
|----------------------|-----------------|-----------------------------|
| Number of phases     | 3 AC            |                             |
| <b>Rated voltage</b> | <b>400V IEC</b> | <b>480V NEC<sub>1</sub></b> |
| Rated power (LO)     | 3.00 kW         | 4.00 hp                     |
| Rated power (HO)     | 2.20 kW         | 3.00 hp                     |
| Rated current (LO)   | 7.70 A          | 6.20 A                      |
| Rated current (HO)   | 5.90 A          | 4.80 A                      |
| Rated current (IN)   | 8.00 A          |                             |
| Max. output current  | 9.10 A          |                             |

|                                     |              |  |
|-------------------------------------|--------------|--|
| Pulse frequency                     | 4 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 $\lambda$          | 0.70 ... 0.85                          |
| Offset factor $\cos \phi$       | 0.96                                   |
| Efficiency $\eta$               | 0.97                                   |
| Sound pressure level (1m)       | 55 dB                                  |
| Power loss <sub>3</sub>         | 0.125 kW                               |
| Filter class (integrated)       | RFI suppression filter for Category C2 |
| EMC category (with accessories) | Category C2                            |

### 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 m <sup>3</sup> /s (0.177 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                 | FSA                 |
| Net weight           | 3.4 kg (7.50 lb)    |

### Dimensions

|        |                  |
|--------|------------------|
| Width  | 73 mm (2.87 in)  |
| Height | 232 mm (9.13 in) |
| Depth  | 218 mm (8.58 in) |

Article No. : **6SL3220-2YE18-0AFO**

### 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<br>2Output (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 | PROFINET, EtherNet/IP |
|---------------|-----------------------|

### Connections

#### Signal cable

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

#### Line side

|                         |  |
|-------------------------|--|
| Version                 | screw-type terminal                                  |
| Conductor cross-section | 1.50 ... 2.50 mm <sup>2</sup><br>(AWG 16 ... AWG 14) |

#### Motor end

|                         |  |
|-------------------------|--|
| Version                 | Screw-type terminals                                 |
| Conductor cross-section | 1.50 ... 2.50 mm <sup>2</sup><br>(AWG 16 ... AWG 14) |

#### DC link (for braking resistor)

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

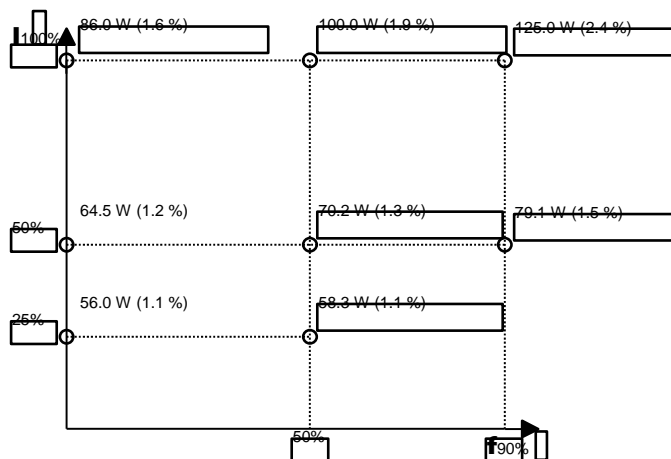
#### Max. motor cable length

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

### Converter losses to IEC61800-9-2\*

|                  |     |
|------------------|-----|
| Efficiency class | IE2 |
|------------------|-----|

|  |        |
|--|--------|
| Comparison with the reference converter (90% / 100%) | 36.8 % |
|--|--------|



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.

\*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 |
|------------|---|

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

<sup>3)</sup> Typical value. More information can be found in the element group "Converter losses to IEC 61800-9-2" in this datasheet.

Article No. : **6SL3220-2YE18-0AF0**

### 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