



Figure similar

### MLFB-Ordering data

6SL3220-3YH60-0CB0

Client order no. :

Order no. :

Offer no. :

Remarks :

Item no. :

Consignment no. :

Project :

### Rated data

#### Input

Number of phases	3 AC	
Line voltage	500 ... 690 V +10 % -10 %	
Line frequency	47 ... 63 Hz	
Rated voltage	690V IEC	600V NEC
Rated current (LO)	471.00 A	461.00 A
Rated current (HO)	362.00 A	381.00 A

#### Output

Number of phases	3 AC	
Rated voltage	690V IEC	600V NEC
Rated power (LO)	400.00 kW	450.00 hp
Rated power (HO)	355.00 kW	400.00 hp
Rated current (LO)	420.00 A	432.00 A
Rated current (HO)	385.00 A	367.00 A
Rated current (IN)	453.00 A	
Max. output current	598.00 A	
Pulse frequency	2 kHz	
Output frequency for vector control	0 ... 100 Hz	
Output frequency for V/f control	0 ... 100 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 $\lambda$	0.75 ... 0.93
Offset factor $\cos \phi$	0.96
Efficiency $\eta$	0.98
Sound pressure level (1m)	74 dB
Power loss	6.884 kW
Filter class (integrated)	RFI suppression filter for Category C3
EMC category (with accessories)	Category C3

### 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	0.362 m <sup>3</sup> /s (12.784 ft <sup>3</sup> /s)
Installation altitude	1000 m (3280.84 ft)
Ambient temperature	
Operation	0 ... 45 °C (32 ... 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
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### Mechanical data

Degree of protection	IP20 / UL open type
Size	FSH
Net weight	162 kg (357.15 lb)
Width	548 mm (21.57 in)
Height	1695 mm (66.73 in)
Depth	393 mm (15.47 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
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#### 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)
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#### 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	Yes
Torque control, with encoder	No

### Communication

Communication	USS, Modbus RTU, BACnet MS/TP
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### Connections

#### Signal cable

Conductor cross-section	0.15 ... 1.50 mm <sup>2</sup> (AWG 24 ... AWG 16)
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#### Line side

Version	M12 screw
Conductor cross-section	35.00 ... 240.00 mm <sup>2</sup> (AWG 2 ... AWG -3)

#### Motor end

Version	M12 screw
Conductor cross-section	35.00 ... 240.00 mm <sup>2</sup> (AWG 2 ... AWG -3)

#### DC link (for braking resistor)

PE connection	M12 screw
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#### Max. motor cable length

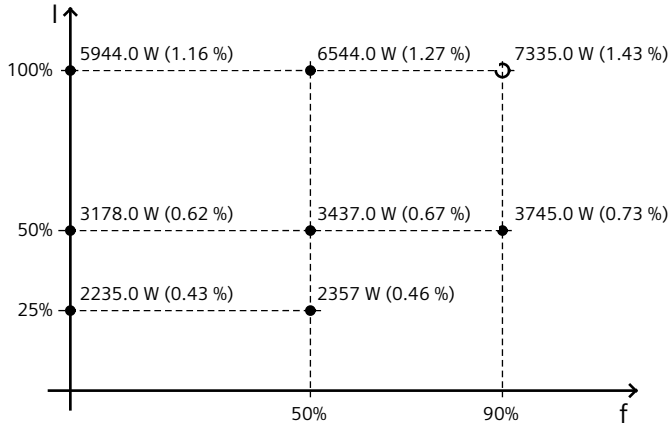
Shielded	150 m (492.13 ft)
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Figure similar

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

Efficiency class	IE2
Comparison with the reference converter (90% / 100%)	-35.20 %



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

### 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	70.0 mm (2.76 in)
Height	106.85 mm (4.21 in)
Depth	19.65 mm (0.77 in)

#### Ambient conditions

##### Ambient temperature during

<b>Operation</b>	0 ... 50 °C (32 ... 122 °F)
	55 °C only with door mounting kit
<b>Storage</b>	-40 ... 70 °C (-40 ... 158 °F)
<b>Transport</b>	-40 ... 70 °C (-40 ... 158 °F)

##### Relative humidity at 25°C during

<b>Max. operation</b>	95 %
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### Approvals

**Certificate of suitability** CE, cULus, EAC, KCC, RCM