



Figure similar

### MLFB-Ordering data

6SL3220-3YE20-1UB0

Client order no. :

Order no. :

Offer no. :

Remarks :

Item no. :

Consignment no. :

Project :

Rated data		General tech. specifications	
<b>Input</b>			
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)	9.75 A	8.00 A	
Rated current (HO)	7.75 A	6.50 A	
<b>Output</b>			
Number of phases	3 AC		
Rated voltage	400V IEC	480V NEC	
Rated power (LO)	4.00 kW	5.00 hp	
Rated power (HO)	3.00 kW	4.00 hp	
Rated current (LO)	10.20 A	7.60 A	
Rated current (HO)	7.70 A	6.20 A	
Rated current (IN)	10.50 A		
Max. output current	14.00 A		
Pulse frequency	4 kHz		
Output frequency for vector control	0 ... 200 Hz		
Output frequency for V/f control	0 ... 550 Hz		
Power factor $\lambda$	0.70 ... 0.85		
Offset factor $\cos \phi$	0.96		
Efficiency $\eta$	0.98		
Sound pressure level (1m)	63 dB		
Power loss	0.138 kW		
Filter class (integrated)	Unfiltered		
EMC category (with accessories)	without		
<b>Ambient conditions</b>			
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	1000 m (3280.84 ft)		
<b>Ambient temperature</b>			
Operation	-20 ... 45 °C (-4 ... 113 °F)		
Transport	-40 ... 70 °C (-40 ... 158 °F)		
Storage	-25 ... 55 °C (-13 ... 131 °F)		
<b>Relative humidity</b>			
Max. operation	95 % At 40 °C (104 °F), condensation and icing not permissible		

### 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



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### Mechanical data

Degree of protection	IP20 / UL open type
Size	FSB
Net weight	6 kg (12.85 lb)
Width	100 mm (3.94 in)
Height	275 mm (10.83 in)
Depth	218 mm (8.58 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	screw-type terminal
Conductor cross-section	1.50 ... 6.00 mm <sup>2</sup> (AWG 16 ... AWG 10)

#### Motor end

Version	Screw-type terminals
Conductor cross-section	1.50 ... 6.00 mm <sup>2</sup> (AWG 16 ... AWG 10)

#### DC link (for braking resistor)

PE connection	On housing with M4 screw
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#### Max. motor cable length

Shielded	150 m (492.13 ft)
Unshielded	300 m (984.25 ft)



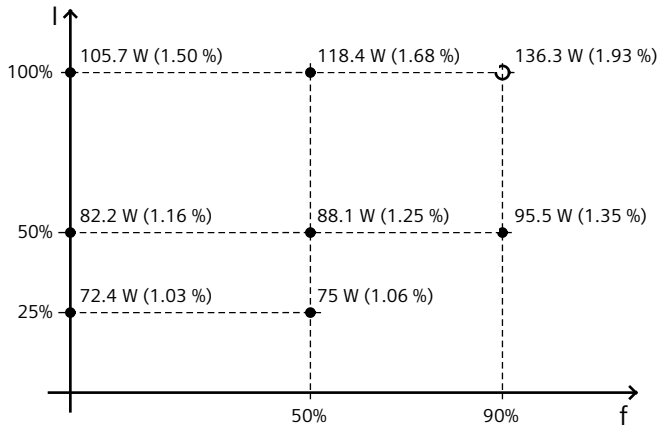
Figure similar

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

Efficiency class	IE2
Comparison with the reference converter (90% / 100%)	-32.10 %



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

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 %
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### Approvals

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

### I/O Extension Module

Technical specifications for the I/O Extension Modul are available via direct input (MLFB 6SL3255-0BE00-0AA0).