



Figure similar

### MLFB-Ordering data

6SL3220-2YC28-0UB0

Client order no. :

Order no. :

Offer no. :

Remarks :

Item no. :

Consignment no. :

Project :

### Rated data

#### Input

Number of phases	3 AC	
Line voltage	200 ... 240 V +10 % -20 %	
Line frequency	47 ... 63 Hz	
Rated voltage	200V IEC	240V NEC
Rated current (LO)	51.00 A	51.00 A
Rated current (HO)	40.00 A	40.00 A

#### Output

Number of phases	3 AC	
Rated voltage	200V IEC	240V NEC
Rated power (LO)	15.00 kW	20.00 hp
Rated power (HO)	11.00 kW	15.00 hp
Rated current (LO)	54.00 A	54.00 A
Rated current (HO)	42.00 A	42.00 A
Rated current (IN)	56.00 A	
Max. output current	73.00 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 $\lambda$	0.90 ... 0.95
Offset factor $\cos \phi$	0.99
Efficiency $\eta$	0.97
Sound pressure level (1m)	70 dB
Power loss	0.610 kW
Filter class (integrated)	Unfiltered
EMC category (with accessories)	without

### 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	0.055 m <sup>3</sup> /s (1.942 ft <sup>3</sup> /s)
Installation altitude	1000 m (3280.84 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
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### Mechanical data

Degree of protection	IP20 / UL open type
Size	FSD
Net weight	17 kg (36.60 lb)
Width	200 mm (7.87 in)
Height	472 mm (18.58 in)
Depth	248 mm (9.76 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	10.00 ... 35.00 mm <sup>2</sup> (AWG 8 ... AWG 2)

#### Motor end

Version	Screw-type terminals
Conductor cross-section	10.00 ... 35.00 mm <sup>2</sup> (AWG 8 ... AWG 2)

#### DC link (for braking resistor)

PE connection	Screw-type terminals
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#### Max. motor cable length

Shielded	200 m (656.17 ft)
Unshielded	300 m (984.25 ft)



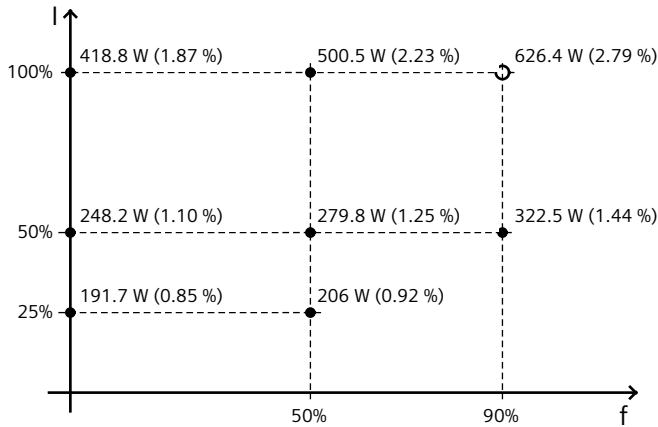
Figure similar

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

Efficiency class	IE2
Comparison with the reference converter (90% / 100%)	-55.25 %



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: Basic Operator Panel (BOP-2)

#### Screen

**Display design** LCD, monochrome

#### Ambient conditions

##### Ambient temperature during

**Operation** 0 ... 50 °C (32 ... 122 °F)

**Storage** -40 ... 70 °C (-40 ... 158 °F)

**Transport** -40 ... 70 °C (-40 ... 158 °F)

#### Mechanical data

**Degree of protection** IP55 / UL type 12

**Net weight** 0.14 kg (0.31 lb)

**Width** 70.0 mm (2.76 in)

**Height** 106.85 mm (4.21 in)

**Depth** 19.60 mm (0.77 in)

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

**Max. operation** 95 %

### Approvals

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