

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6SL3420-1TE21-0AA1

SINGLE AXIS MOTOR POWER MODULE

Used with the applicable SINAMICS S120 Booksize Compact configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens D21.4 2017, Booksize Compact single Motor Modules, printed pp.7/66 to 7/67

SINAMICS S120 drive system

Booksize format

Single Motor Modules in booksize compact format

Selection and ordering data

Rated output current	Type rating ³⁾	Single Motor Module in booksize compact format
A	kW (hp)	Article No.
DC link voltage 510 ... 720 V DC		
3	1.6 (1.5)	6SL3420-1TE13-0AA1
5	2.7 (3)	6SL3420-1TE15-0AA1
9	4.8 (5)	6SL3420-1TE21-0AA1
18	9.7 (10)	6SL3420-1TE21-8AA1

Description	Article No.
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Accessories

DC link rectifier adapter For direct infeed of DC link voltage. Screw-type terminals 0.5 ... 10 mm ² For Line Modules and Motor Modules in booksize format with a width of 50 mm (1.97 in), 75 mm (2.95 in) and 100 mm (3.94 in)	6SL3162-2BD00-0AA0
DC link adapter (2 units) For multi-tier configuration Screw-type terminals 35 ... 95 mm ² For all Line Modules and Motor Modules in booksize format	6SL3162-2BM01-0AA0
24 V terminal adapter For all Line Modules and Motor Modules in booksize format	6SL3162-2AA00-0AA0
Spacing bolt (4 units) The mounting depth of modules in booksize compact format is increased when it is mounted on these spacing bolts by such an amount that it can be integrated into a drive line-up in booksize format. 2 spacing bolts are required to mount 50 mm (1.97 in) wide modules, and 4 spacing bolts for 75 mm (2.95 in) wide modules.	6SL3462-1CC00-0AA0

Accessories for re-ordering

24 V jumper For connection of the 24 V busbars (for booksize format)	6SL3162-2AA01-0AA0
Warning labels in 30 languages This label set can be glued over the standard German or English labels to provide warnings in other languages. One set of labels is supplied with the devices. One sign in each of the following languages is provided in each set: BG, CN, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, JP, KR, LT, LV, MT, NL, NO, PL, PT, RO, RU, SE, SI, SK, TR	6SL3166-3AB00-0AA0
Dust protection blanking plugs (50 units) For DRIVE-CLiQ port	6SL3066-4CA00-0AA0

Technical specifications

	Single Motor Module in booksize compact format
DC link voltage (up to 2000 m (6562 ft) above sea level)	510 ... 720 V DC (line voltage 380 ... 480 V 3 AC)
Output frequency • Control mode Servo • Control mode Vector • Control mode V/f	0 ... 650 Hz ^{1) 2)} 0 ... 300 Hz ¹⁾ 0 ... 600 Hz ^{1) 2)}
Electronics power supply	24 V DC -15 %/+20 %
Type of cooling	Internal air cooling (power units with increased air cooling by built-in fan)
Permissible ambient and coolant temperature (air) during operation for line-side components, Line Modules and Motor Modules	0 ... 40 °C (32 ... 104 °F) without derating, > 40 ... 55 °C (104 ... 131 °F), see derating characteristics
Installation altitude	Up to 1000 m (3281 ft) above sea level without derating, > 1000 ... 4000 m (3281 ... 13124 ft) above sea level, see derating characteristics
Declarations of conformity	CE (Low Voltage and EMC Directives)
Certificate of suitability	UL-recognized
Safety Integrated	Safety Integrity Level 2 (SIL 2) acc. to IEC 61508, Performance Level d (PL d) acc. to ISO 13849-1 and Control Category 3 acc. to ISO 13849-1 or EN 954-1 For further information, see section Safety Integrated..

¹⁾ Note the correlation between max. output frequency, pulse frequency and current derating. [For further information, see section configuration notes.](#)

²⁾ The output frequency is currently limited to 550 Hz. The specified values apply to systems with license for high output frequency.
[For further information, see section Control Units and https://support.industry.siemens.com/cs/document/104020669](https://support.industry.siemens.com/cs/document/104020669)

³⁾ Nominal hp ratings based on asynchronous (induction) motors. Match the motor nameplate current for specific sizing.

Technical specifications

DC link voltage 510 ... 720 V DC		Single Motor Module in booksize compact format			
Internal air cooling		6SL3420-1TE13-0AA1	6SL3420-1TE15-0AA1	6SL3420-1TE21-0AA1	6SL3420-1TE21-8AA1
Output current					
• Rated current I_{rated}	A	3	5	9	18
• Base-load current I_H	A	2.6	4.3	7.7	15.3
• For S6 duty (40 %) I_{S6}	A	3.5	6	10	24
• I_{max}	A	9	15	27	54
Type rating ¹⁾					
• Based on I_{rated}	kW (hp)	1.6 (1.5)	2.7 (3)	4.8 (5)	9.7 (10)
• Based on I_H	kW (hp)	1.4 (1)	2.3 (2.5)	4.1 (5)	8.2 (10)
Rated pulse frequency	kHz	8	8	4	4
DC link current I_d ²⁾	A	3.6	6	11	22
Current carrying capacity					
• DC link busbars	A	100	100	100	100
• 24 V DC busbars ³⁾	A	20	20	20	20
DC link capacitance	μF	110	110	110	235
Current requirement At 24 V DC, max.	A	0.85	0.85	0.85	0.85
Power loss	kW	0.07	0.1	0.1	0.18
Cooling air requirement	m ³ /s (ft ³ /s)	0.008 (0.3)	0.008 (0.3)	0.008 (0.3)	0.008 (0.3)
Sound pressure level L_{pA} (1 m)	dB	<60	<60	<60	<60
Motor connection U2, V2, W2		Connector (X1) with screw-type terminals	Connector (X1) with screw-type terminals	Connector (X1) with screw-type terminals	Connector (X1) with screw-type terminals
• Conductor cross-section	mm ²	0.2 ... 6	0.2 ... 6	0.2 ... 6	0.2 ... 6
Shield connection		Integrated in connector (X1)	Integrated in connector (X1)	Integrated in connector (X1)	Integrated in connector (X1)
PE connection		M5 screw	M5 screw	M5 screw	M5 screw
Motor brake connection		Connector (X11), 24 V DC, 2 A	Connector (X11), 24 V DC, 2 A	Connector (X11), 24 V DC, 2 A	Connector (X11), 24 V DC, 2 A
Motor cable length, max.					
• Shielded	m (ft)	50 (164)	50 (164)	50 (164)	70 (230)
• Unshielded	m (ft)	75 (246)	75 (246)	75 (246)	100 (328)
Degree of protection		IP20	IP20	IP20	IP20
Dimensions					
• Width	mm (in)	50 (1.97)	50 (1.97)	50 (1.97)	75 (2.95)
• Height	mm (in)	270 (10.63)	270 (10.63)	270 (10.63)	270 (10.63)
• Depth	mm (in)	226 (8.90)	226 (8.90)	226 (8.90)	226 (8.90)
Weight, approx.	kg (lb)	2.7 (5.95)	2.7 (5.95)	2.7 (5.95)	3.4 (7.50)

¹⁾ Rated power of a typical standard asynchronous (induction) motor at 600 V DC link voltage.

²⁾ Rated DC link current for dimensioning an external DC connection.
[For DC link current calculation for dimensioning the Line Module,](#)
[see section configuration notes.](#)

³⁾ If, due to a number of Line Modules and Motor Modules being mounted side-by-side, the current carrying capacity exceeds 20 A, an additional 24 V DC connection using a 24 V terminal adapter is required (max. cross-section 6 mm², max. fuse protection 20 A).

⁴⁾ Power loss of Motor Module at rated power including losses of 24 V DC electronics power supply.